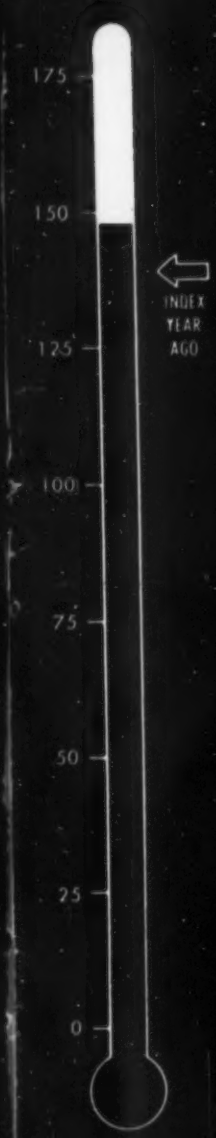
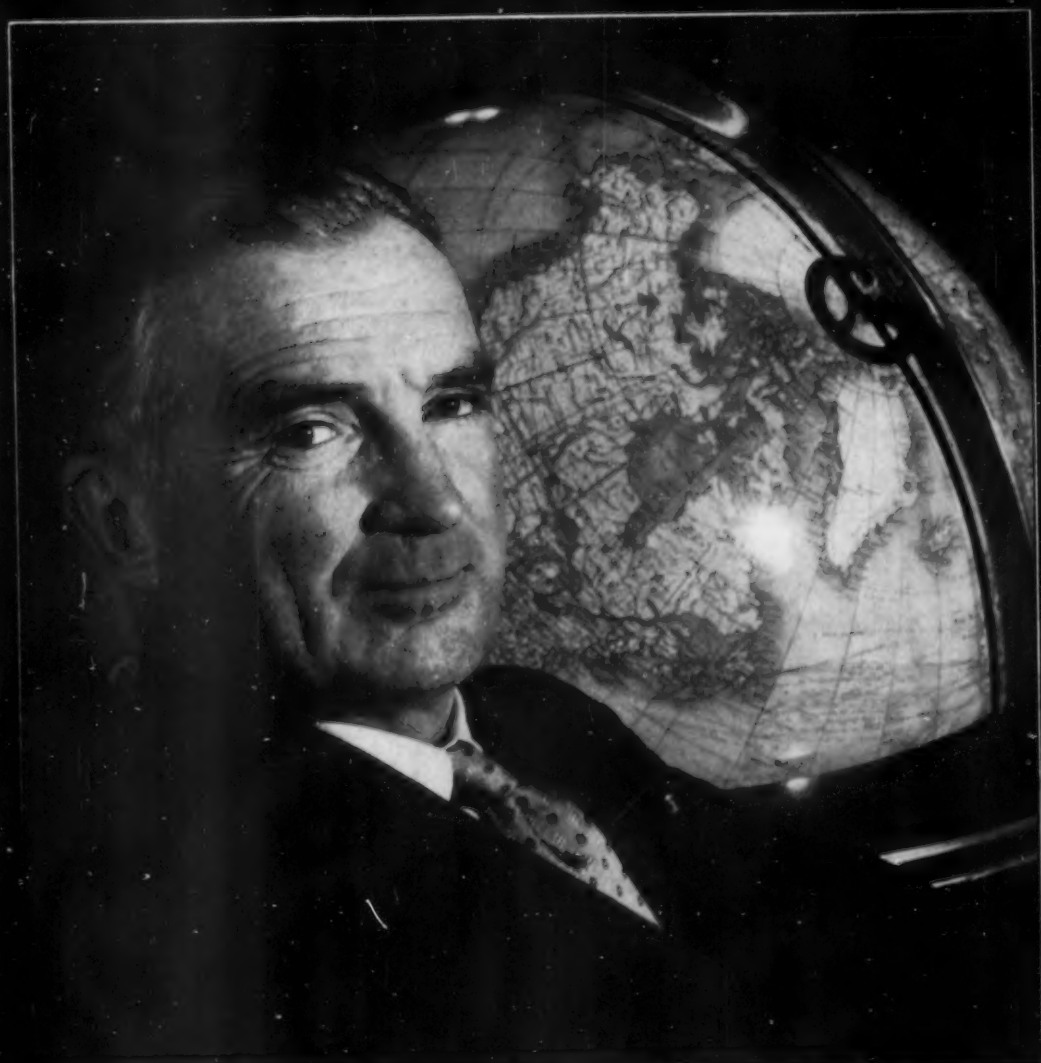
# BUSINESS WEEK



Democrat Symington: He hopes weapons are the chink in Eisenhower's armor (page 30)

A McGRAW-HILL PUBLICATION

MAR. 31, 1956

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# "National Accounting Machines save us $32,290 a year...return 74% annually on our investment!"

—JACOBSEN MANUFACTURING CO., *Racine, Wisconsin*

"National Accounting Machines save us $32,290 a year — repaying 74% annually on our investment.

"Our business is seasonal and highly competitive — a combination requiring the most versatile accounting equipment available. Our flexible and efficient Nationals have met this demand. They enable our operators to keep ahead of schedule. Peak work periods are eliminated. Current accounting details are always available.

"Our use of National Accounting Machines to control Sales Analysis, Accounts Receivable, Accounts Payable and Payroll for Jacobsen Manufacturing Company and its subsidiaries has contributed much to the success of our operations."

C. V. Jacobsen

*President*

*In your business, too, National machines will pay for themselves with the money they save, then continue savings as annual profit. Your nearby National man will gladly show how much you can save—and why your operators will be happier. (See yellow pages of your phone book, or write to us at Dayton 9, Ohio.)*

**THE NATIONAL CASH REGISTER COMPANY,** DAYTON 9, OHIO

986 OFFICES IN 94 COUNTRIES

National

ACCOUNTING MACHINES

ADDING MACHINES • CASH REGISTERS

## GENERAL BUSINESS


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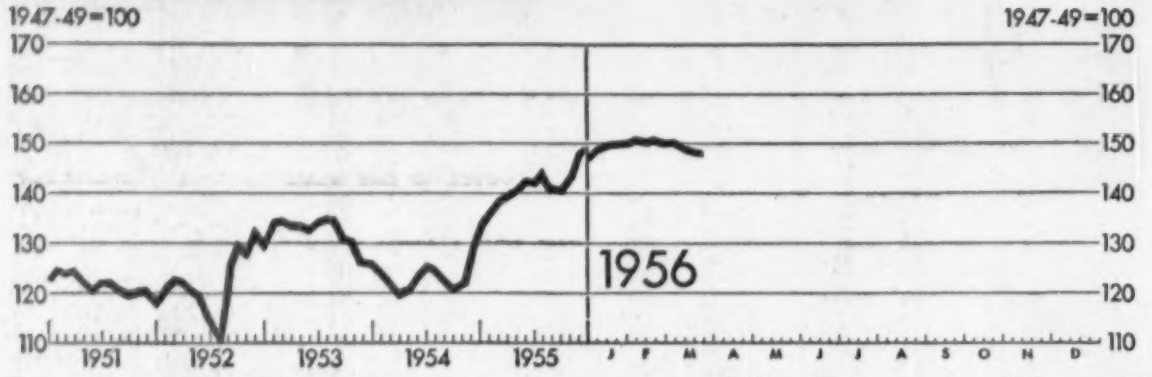
# FIGURES OF THE WEEK

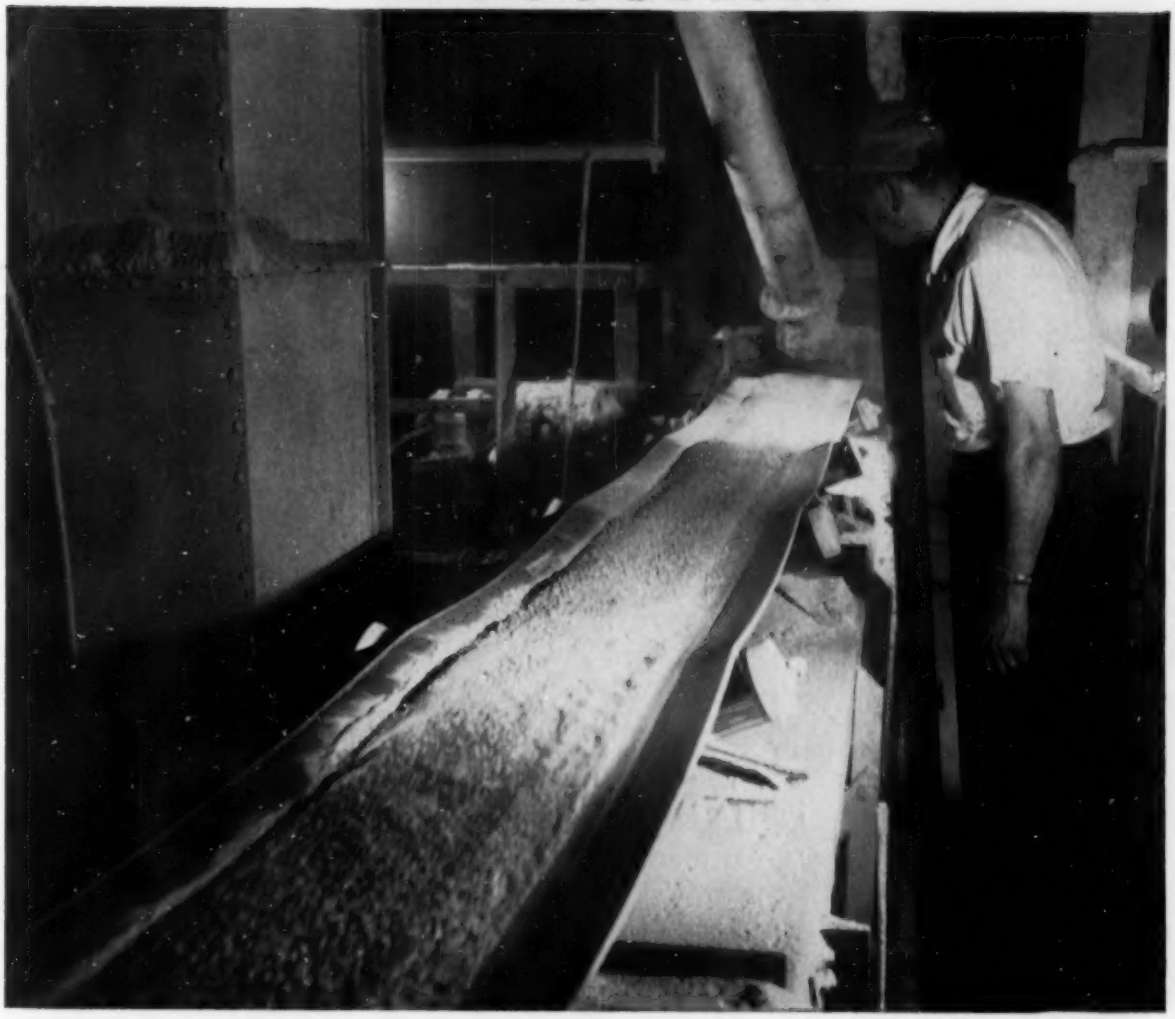



| | 1946 Average | Year Ago | Month Ago | Week Ago | § Latest Week |
|---|---|---|---|---|---|
| **BUSINESS WEEK INDEX (chart)** | **91.6** | **140.5** | **150.7** | **†148.9** | ***148.7** |
| **PRODUCTION** | | | | | |
| **Steel ingot** (thous. of tons) | 1,281 | 2,278 | 2,459 | †2,449 | **2,400** |
| **Automobiles and trucks** | 62,880 | 217,347 | 156,258 | †167,014 | **167,612** |
| **Engineering const. awards** (Eng. News-Rec. 4-wk daily av. in thous.) | $17,083 | $67,235 | $69,736 | $83,469 | **$84,313** |
| **Electric power** (millions of kilowatt-hours) | 4,238 | 9,907 | 11,277 | 11,202 | **11,134** |
| **Crude oil and condensate** (daily av., thous. of bbls.) | 4,751 | 6,863 | 7,183 | 7,153 | **7,163** |
| **Bituminous coal** (daily av., thous. of tons) | 1,745 | 1,343 | 1,675 | 1,588 | **1,538** |
| **Paperboard** (tons) | 167,269 | 267,445 | 291,984 | 281,572 | **285,966** |
| **TRADE** | | | | | |
| **Carloadings: miscellaneous and l.c.l.** (daily av., thous. of cars) | 82 | 71 | 71 | 73 | **72** |
| **Carloadings: all others** (daily av., thous. of cars) | 53 | 38 | 46 | 44 | **43** |
| **Department store sales** (change from same wk of preceding year) | +30% | +14% | +6% | +7% | **−2%** |
| **Business failures** (Dun & Bradstreet, number) | 22 | 232 | 230 | 300 | **208** |
| **PRICES** | | | | | |
| **Spot commodities, daily index** (Moody's Dec. 31, 1931 = 100) | 311.9 | 401.5 | 404.9 | 409.1 | **413.8** |
| **Industrial raw materials, daily index** (BLS, 1947-49 = 100) | ††73.2 | 91.2 | 99.2 | 99.5 | **99.2** |
| **Foodstuffs, daily index** (BLS, 1947-49 = 100) | ††75.4 | 87.1 | 76.1 | 77.4 | **78.2** |
| **Print cloth** (spot and nearby, yd.) | 17.5¢ | 18.7¢ | 20.4¢ | 19.8¢ | **19.5¢** |
| **Finished steel, index** (BLS, 1947-49 = 100) | ††76.4 | 144.7 | 157.1 | 157.1 | **157.1** |
| **Scrap steel composite** (Iron Age, ton) | $20.27 | $37.00 | $47.83 | $50.17 | **$52.50** |
| **Copper** (electrolytic, delivered price, E & MJ, lb.) | 14.045¢ | 33.480¢ | 46.510¢ | 46.680¢ | **46.840¢** |
| **Wheat** (No. 2, hard and dark hard winter, Kansas City, bu.) | $1.97 | $2.48 | $2.23 | $2.27 | **$2.32** |
| **Cotton, daily price** (middling, 14 designated markets, lb.) | **30.56¢ | 33.44¢ | 35.44¢ | 35.50¢ | **35.55¢** |
| **Wool tops** (Boston, lb.) | $1.51 | $2.00 | $1.80 | $1.76 | **$1.76** |
| **FINANCE** | | | | | |
| **90 stocks, price index** (Standard & Poor's) | 135.7 | 292.4 | 359.4 | 384.1 | **385.8** |
| **Medium grade corporate bond yield** (Baa issues, Moody's) | 3.05% | 3.48% | 3.58% | 3.60% | **3.61%** |
| **Prime commercial paper, 4 to 6 months, N. Y. City** (prevailing rate) | ¾-1% | 1⅜-1¾% | 3% | 3% | **3%** |
| **BANKING (Millions of Dollars)** | | | | | |
| **Demand deposits adjusted,** reporting member banks | ††45,820 | 56,282 | 56,106 | 57,603 | **56,500** |
| **Total loans and investments,** reporting member banks | ††71,916 | 83,996 | 84,073 | 85,349 | **86,489** |
| **Commercial and agricultural loans,** reporting member banks | ††9,299 | 22,747 | 26,241 | 27,047 | **27,711** |
| **U. S. gov't guaranteed obligations held,** reporting member banks | ††49,879 | 33,509 | 28,395 | 28,431 | **28,654** |
| **Total federal reserve credit outstanding** | 23,888 | 25,327 | 25,360 | 25,308 | **25,754** |

| **MONTHLY FIGURES OF THE WEEK** | | 1946 Average | Year Ago | Month Ago | Latest Month |
|---|---|---|---|---|---|
| **Cost of Living (U. S. Dept of Labor BLS, 1947-49 = 100)** | **February** | **83.4** | **114.3** | **114.6** | **114.6** |
| **McGraw-Hill indexes of new orders (1950 = 100)** | | | | | |
| **New orders for machinery, except electrical** | **February** | **N.A.** | **102** | **128** | **152** |
| **Construction & mining machinery** | **February** | **N.A.** | **142** | **149** | **162** |
| **Engines & turbines** | **February** | **N.A.** | **114** | **121** | **207** |
| **Pumps & compressors** | **February** | **N.A.** | **129** | **152** | **187** |
| **Metalworking machinery** | **February** | **N.A.** | **133** | **221** | **219** |
| **Other industrial machinery** | **February** | **N.A.** | **97** | **117** | **145** |
| **Office equipment** | **February** | **N.A.** | **105** | **125** | **135** |
| **New contracts for industrial building** | **February** | **N.A.** | **101** | **166** | **226** |
| **Imports (in millions)** | **January** | **$412** | **$871** | **$1,015** | **$1,073** |

° *Preliminary, week ended March 24, 1956.*
† *Revised.*
†† *Estimate.*
** *Ten designated markets.*
§ *Date for 'Latest Week' on each series on request.*
*N.A.—Not available.*

# B.F.Goodrich



# It used to burn up every 6 months

***A typical example of B. F. Goodrich improvement in rubber***

YOU could smell the belt burning, see the cracks in it. Limestone sand, to be used in making window glass, is heated to 300 degrees, then dumped onto a moving belt to be carried away from the furnace. But the sizzling heat burned out belts of almost every known make—they averaged only six months.

Then an engineer suggested a new, improved B. F. Goodrich hot-material belt, called Solarflex. It's made with a special kind of rubber that stays soft and pliable even at temperatures that cause other belts to harden and crack.

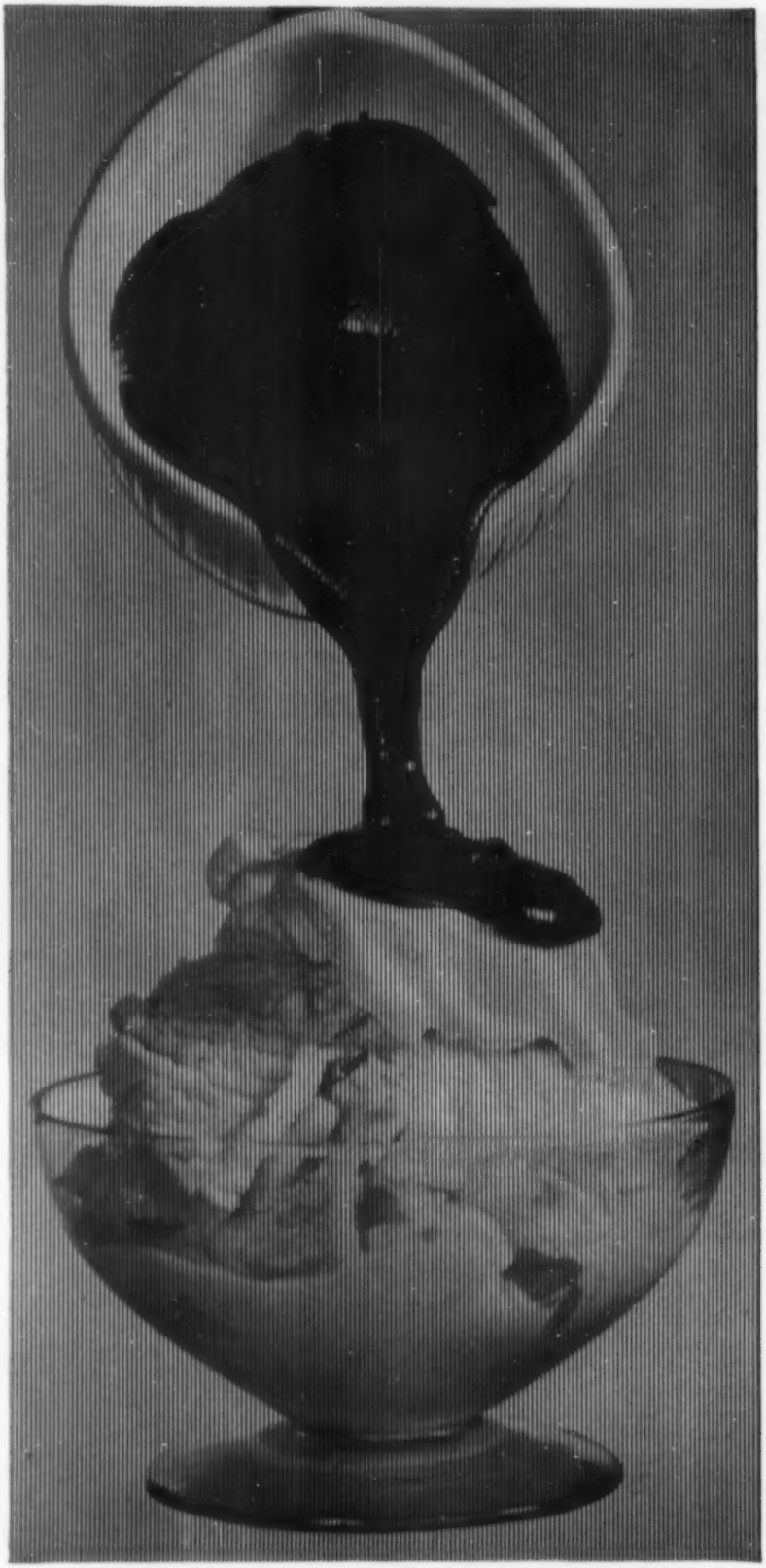
They fastened a length of the new B. F. Goodrich belting to the hot material belt you see here. The heat ruined the regular belt as usual—but not the Solarflex. It has now outlasted three standard hot-material belts, is still going strong after two years.

B. F. Goodrich conveyor belts invariably save money for users because they're engineered for the special jobs to be done. Some kinds of belts stand crashing blows, lasting far longer than others ever used to last. Some are made to handle wet, sticky or freezing materials without clogging pulleys. Some are made to carry packages and other things up very steep inclines. In fact, there's a B. F. Goodrich belt for almost every problem.

Call your B. F. Goodrich distributor for more information about any kind of belting, hose or other B. F. Goodrich rubber products. *The B. F. Goodrich Company, Dept. M-604, Akron 18, Ohio.*

**B.F.Goodrich**

**INDUSTRIAL PRODUCTS DIVISION**



# SUNDAE BEST

According to our Food Editor, the secret's in the sauce—when you want to dress up your favorite ice cream.

Four out of five women readers stopped, looked and read this appetizing article on quick Sundae Sauces in a recent issue of PARADE.

Week after week PARADE serves up outstanding features for the whole family—making it the best read magazine in print. According to independent surveys, this gives advertisers twice as many readers for their dollar as the big weekday magazines.

Food for thought: to cook up more sales . . . to keep dealers coming back for more . . . PARADE has what it takes.

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## READERS REPORT

### Cyclops Opens Eyes

Dear Sir:

Your special report Television: The New Cyclops [BW—Mar.10 '56,p76] was terrific . . . and it really opened my eyes to such an extent that I started doing a little planning for my beautiful Cypress Gardens on a ten-year basis. . . .

It might interest you to know that we spent $14,000 here at Cypress Gardens to get nine minutes on the Wide Wide World program . . . and believe me we are going to go after this TV more and more in the future. Actually, although we are away up in the hills of central Florida, our box office gross in the last ten weeks is ahead of any theater in America except Radio City Music Hall, which means that the hobby of photography, the thrill of water skiing, the appeal of color flowers, aided by constant mention on TV, wears away the hardest Yankee. And your story is going to finalize our thinking on this question just that much more. . . .

RICHARD D. POPE
PRESIDENT
FLORIDA CYPRESS GARDENS ASSN., INC.
WINTER HAVEN, FLA.

### Ambition or Security?

Dear Sir:

From the Toronto Telegram: "We were a little surprised to discover the other day that some of the junior executives are not anxious to replace their bosses. By a sort of a coincidence we were talking to three of these people last week. They did not know each other, but they all had the same idea.

"They said that it would not be too many years before they themselves would be eligible for their pension and they had no desire to kill themselves with work and worry before that time. They are making good salaries and know they can do their present job well. They frankly admit that their desire for security is greater than their ambition."

Ambitious? Or sensible? What is your opinion? Your article Critical Health Age: 30-40 [BW—Mar. 3'56,p56] encouraged me to send this on to you.

J. G. FRASER
OWEN SOUND, ONT., CANADA

**• Ambition and security, at the extremes, have always been in op-**

# Is "commuter commotion"

# hurting your business?

## Tests prove VMP MOBILWALLS increase office efficiency by eliminating distractions!

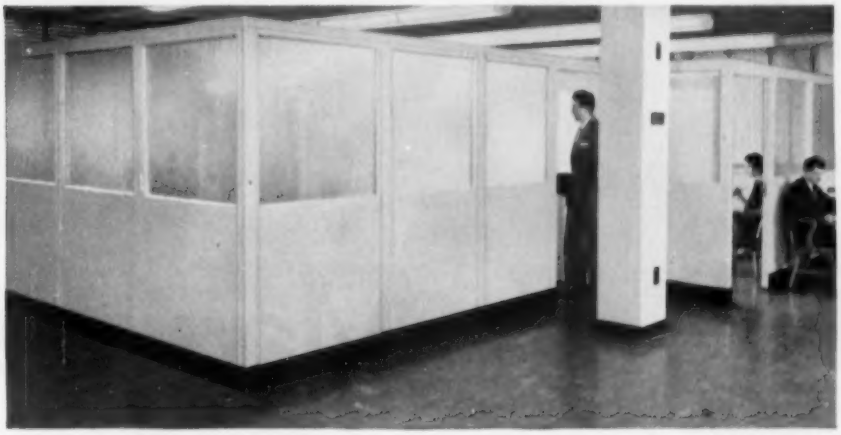
Working in open offices, even in some of the smartly-styled ones, is often quite distracting. Without privacy, without the proper channeling of office traffic, there's little hope of an employee doing a full day's work at peak efficiency. Even a little consideration of the problem and its simple solution will convince you that payroll dollars are being thrown away—until action is taken.

*Do something constructive about it now.* Have a VMP sales engineer prove the big immediate savings that result from a VMP MOBILWALL installation: Savings in the number of employees; improved efficiency and morale; more sales with better service!

VMP uses *ratio-delay studies* to rate accurately the operating efficiency of offices—to reveal the frequency and degree of distractions resulting from lack of privacy. Recent studies of firms who installed VMP MOBILWALLS show—

- Delays and lost motion reduced as much as 58%.
- VMP MOBILWALLS added as much to the work output as could have been gained by a 30% increase in employees and payroll.
- Time devoted to distractions and correction of resulting errors decreased as much as 55%.
- Office productivity increased as much as 30%!

You will find that VMP can bring peace and privacy into your office with its well-engineered line of metal, movable MOBILWALLS—and do it fast, at low cost!



SOMEWHERE IN YOUR OFFICE OR PLANT is a group that could benefit immediately from an attractive, practical VMP partitioning job like this one. VMP MOBILWALLS can be moved anywhere, any time to suit changes in floor plans. Their surfaces never chip, warp, or crack—wash clean with soap and water. There's a wide selection of restful colors that harmonize with existing walls.

THE NEW VMP ROYAL FLUSH MOBILWALL features increased flexibility, fewer parts, complete facilities for wiring. RF's can be installed by local VMP crews in a few hours—without interruption in working routine. Their cost is lowered by the increased efficiency you get from each worker daily. And movable, metal VMP partitions cost less to install . . . relocate . . . maintain!

Write to Dept. BW-3 for complete, illustrated literature; ratio-delay study data; VMP sales engineer listings.

**Virginia Metal Products, inc.**

ORANGE, VIRGINIA

Subsidiary of Chesapeake Industries, Inc.

# Magic carpet

Traffic jams, crowded cars, waiting for cages when changing shifts will be a thing of the past in the Crichton Number 4 Mine of Johnstown Coal & Coke Company. For with the introduction of the new Hewitt-Robins MAN-VEYOR, miners will ride smoothly and safely deep into the earth at the rate of one every 4 seconds. Instead of men piling up at the shaft head waiting for the elevator, incoming and outgoing shifts will be speedily transferred in a steady stream on this reversible man-carrying belt conveyor.

The new Hewitt-Robins MAN-VEYOR is essentially a standard 26"-wide mine conveyor. Special safety features such as oversized heavy-duty drives, end booms for loading and unloading of men, and a nonskid belt design have been added. The entire system is designed to operate in perfect safety for the transportation of personnel at a speed of 150 feet per minute. Allowing 10 feet per man, this provides a ca-

HEWITT-ROBINS INCORPORATED

CONVEYOR BELTING • INDUSTRIAL HOSE • CONVEYOR MACHINERY • VIBRATING SCREENS • VIBRATING CONVEYORS

# for miners...

pacity of 900 men per hour. This unique installation of a belt conveyor is one more example of the way in which Hewitt-Robins has maintained leadership in mechanization within the mining industry. For wherever coal is handled in bulk, from face through preparation plant, you will find a specially designed Hewitt-Robins belt conveyor system to handle the job more efficiently and economically.

Although Hewitt-Robins is known primarily as the manufacturer of complete belt conveyor systems (both belting *and* machinery), we eagerly accept the challenge of solving any unusual problem in bulk materials handling. Hewitt-Robins has unequaled background in all phases of design, engineering and manufacture of such systems to answer your particular materials handling problem. For complete information about Hewitt-Robins products and services, contact our nearest sales office, your local Hewitt-Robins distributor or write to our executive offices in Stamford, Connecticut.

STAMFORD, CONNECTICUT **Hewitt-Robins**

DESIGN, MANUFACTURE, ENGINEERING AND ERECTION OF COMPLETE BULK MATERIALS HANDLING SYSTEMS

GM
GENERAL MOTORS

GENERAL MOTORS LEADS THE WAY—

# *You can get more earning hours*

## *in passenger service with Delco-Remy heavy-duty electrical equipment*

Delco-Remy's hard-working heavy-duty A.C. generators are tailor-made for dependable crosscountry or crosstown busses with extra-heavy electrical loads.

Desirable performance characteristics include cut-in at low generator rpm . . . maximum output of 180 amperes at low to medium speeds. With companion rectifiers and regulators these new generators can supply both alternating current for fluorescent lighting and direct current for the heaviest electrical loads coupled with lengthy engine-at-idle periods.

Impressive features of the new generators are their light weight, very high output capacity, and ability to operate over a wide speed range with greatest efficiency.

Delco-Remy also makes other heavy-duty electrical units, including the new longer life Delco batteries. Whether you're modernizing old vehicles or ordering new ones, be sure to specify Delco-Remy heavy-duty electrical equipment.

DELCO REMY • DIVISION OF GENERAL MOTORS • ANDERSON, INDIANA

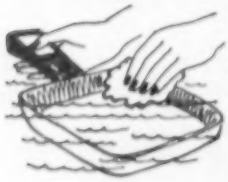
STARTING WITH **Delco-Remy** ELECTRICAL SYSTEMS

DOW CORNING CORPORATION

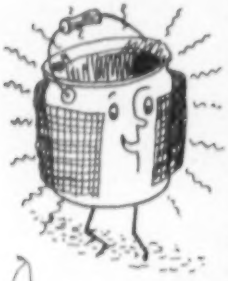
# SILICONE NEWS LETTER

## Silicones Aid Diversification...Build Markets

**With their inherent indifference to time, temperature and weather, *Dow Corning Silicones* have stimulated the development of many new devices and added new sales appeal to established products ranging from aircraft to shoes. Here are a few examples of how leaders in many different industries are using silicones to diversify their line or to increase their share of the market. Send coupon for more information on silicones.**

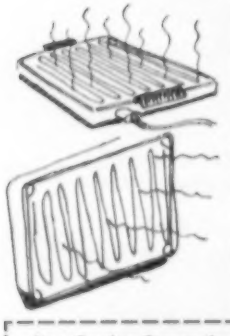


**Silicone RUBBER puts the sizzle in "Frypan" sales.** Women want the convenience of a built-in source of controlled heat but not at the expense of easy washability. Now they can get both in the Sunbeam Automatic Frypan, thanks to Silastic*, Dow Corning's silicone rubber. Even when "Frypan" is almost totally immersed in water, electrical connections stay dry inside terminal box sealed with Silastic. Seal is unaffected by long exposure at temperatures up to 450 F! Wiring is also insulated with Silastic, and covered with silicone-glass sleeving to give maximum life and reliability. ***No. 14***



**Industry warms up to woven heaters insulated with silicone VARNISH.** Originally developed to keep military cameras operable at high altitudes, woven contact heaters have opened many new markets for Pre-Fab Heater Co. Typical application is a woven heater which snaps around a drum and quickly brings contents to 500 F. Key to success of these heaters is impregnation of the woven glass yarn with a Dow Corning varnish to form a heat-stable, dielectric coating. ***No. 15***

**Silicone FLUID makes viscous damping practical.** First practical application of this old principle was made by Houdaille-Hershey Corporation in a more effective torsional vibration damper for crankshafts of internal combustion engines. Essential to the success of this device is Dow Corning 200 Fluid with its remarkably constant viscosity and high resistance to oxidation and shear breakdown. For example, from —40 to 160 F, the damping effect of this silicone fluid decreases in the ratio of 3 to 1 while the ratio for a conventional hydraulic oil of comparable viscosity is 2500 to 1. ***No. 16***



**Silicone PAINT expands market for glass heating panels.** To produce millions of radiant heating panels for wall heaters, food warmers and serving trays, engineers at Blue Ridge Corporation had to find an easy way to apply a resistance heating circuit to plates of tempered glass. They solved that problem by first coating the heated glass with metallic aluminum. The heating element is then traced on the aluminum coating with silicone paint applied through a silk screen. Silicone paint withstands the caustic bath used to remove the rest of the aluminum coating. ***No. 17***

*T. M. REG. U. S. PAT. OFF.

## Dow Corning Silicones Mean Business!

***MAIL THIS COUPON TODAY***

Dow Corning Corporation, Dept. 2203-B, Midland, Michigan
Please send me more information on: 14 ☐ 15 ☐ 16 ☐ 17 ☐
☐ "What's a Silicone", 32 page illustrated booklet
☐ 1956 reference guide to silicone products

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MIDLAND, MICHIGAN

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**position to each other. But BW's article, based on Life Extension Examiners' findings, may help top management understand that a good corporate health program is as important for the young comers as it is for older executives, and thus can encourage ambition.**

## Reverse View

Dear Sir:

Congratulations for a job well done in connection with your recent article on the auto rental business [BW—Feb.25'56,p66].

I know that articles of this kind benefit the auto rental business of all companies by increasing the awareness of our service among potential customers. But there is a more important benefit of how our business is doing and where it is going.

Too often when we want to look at ourselves, we get a mirror-like view. The news of business as you report it helps us stand back and look at ourselves and to understand our part in the economy.

R. S. ROBIE
PRESIDENT
AVIS RENT-A-CAR SYSTEM
BOSTON, MASS.

## Six to One

Dear Sir:

Your finance article They're the Market's Hottest [BW—Mar.3'56, p96] was very interesting and well done. On page 98, however, you state that aluminum at 24.4¢ a lb. of ingot is "about one-half the price of copper" at 46¢ a lb. While on the surface of things this may appear to be true, actually it does not take into account the very important consideration that aluminum is much lighter than copper. The specific gravity of copper is 8.9 whereas for aluminum it is 2.7. In other words, one obtains 3.2 times as much volume of aluminum as copper per pound of weight. This means that a piece of basic copper equal in volume to a pound of aluminum would, at the present market price, cost 3.2 times 46¢ a lb. or $1.47, which is roughly six times as much as aluminum at 24.4¢ a lb.

The six to one price ratio does not, strictly speaking, apply to electrical applications for the following reason: The electrical conductivity of aluminum is 61% that of copper on an equal volume basis. Pound for pound, however, aluminum will carry approximately twice as much current as copper. This means that even for electrical purposes the

price of copper today is between three and one-half to four times as much as that of aluminum.

D. WILMOT
VICE-PRESIDENT
ALUMINUM CO. OF AMERICA
PITTSBURGH, PA.

## Economists Redeemed

Dear Sir:

My reaction to reader Schuchman's letter [BW—Feb.11'56,p12—Code of Behavior] was one of indignation and amusement. He takes the economists to task for a variety of mutually contradictory reasons:

(1) "Too few of them are economic statesmen, and as a corollary, too many are affiliated with pressure groups. . . ." I have never seen a rigorous definition of the expression "economic statesmen" but I always considered it a designation of the wise decision maker in the business community who never takes action without first giving due regard to the public interest. The key phrase here is "decision maker." Almost always, the economist is employed in a staff capacity with the responsibility of advising management or labor as to economic trends. This advice may be good or bad, accepted or rejected. This hardly puts the economist in a position to play the role of economic statesman.

(2) "Too many have become professional economists without first being well-grounded and loyal citizens of our unique republic." This statement constitutes an unfounded and crude insult to the loyalty of an entire professional group which is no less patently absurd than the same statement would have been had the words "valve manufacturers" been substituted for "professional economists."

(3) "Their individualist nature or some other quality has resulted in their publicly expressing widely varying points of view. . . ." Here reader Schuchman treats us to his deep understanding of the underlying principles of our "unique republic." His reasoning reminds one of Alice's adventures behind the looking glass. *Nineteen-eighty-four* must surely be upon us when an individualist nature is taken to be at odds with the principles upon which our republic is based.

(4) "They, as a group, have failed to adopt a code of economic behavior." What would such a code comprise? Would it deal with fees, for example, or ethics?

I believe that if, indeed, econo-

Here's a development top management should know about

As a member of the management team in your firm, you may want to tell the man responsible there's a floor and rug maintenance machine capable of doing *10 different jobs.*

This *one* machine—the all-new American Floor-King—will scrub, wax, polish, buff, steel wool, disc sand, shampoo a rug—wet or dry, even polish terrazzo, smooth or level concrete.

Our management team worked closely with users in all fields to develop and produce this more practical, more useful, more versatile and easiest to use machine for any job, any floor, any rug.

As you know, sometimes it's a top management function to start the ball rolling when you see an opportunity to lower costs in any department. Industrial sanitation now deserves the same attention as do manufacturing techniques.

1 machine does 10 floor-cleaning jobs!

Send for buying facts today . . . or have your maintenance supervisor write. We have all sizes in maintenance machines, vacuums, completely automatic floor scrubbers.

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# Quick brush off for burrs

MACHINING this extruded aluminum armature shaft for an aircraft generator turns up heavy burrs. However, Osborn's power brushing method quickly removes burrs and—at the same time—blends all sharp edges.

This is typical of how industry is using Osborn power brushing to improve and speed up thousands of finishing operations.

An **O**sborn **B**rushing **A**nalysis made in your plant will show how *you* can profit from Osborn power brush finishing. Write *The Osborn Manufacturing Company, Dept. A-75, 5401 Hamilton Avenue, Cleveland 14, Ohio.*

Osborn Brushes

OSBORN

BRUSHING METHODS • POWER, PAINT AND MAINTENANCE BRUSHES
BRUSHING MACHINES • FOUNDRY MOLDING MACHINES


mists have suffered from bad public relations it results from a basic misunderstanding in the public mind as to what economists do and what economics is all about. While it is true that economic forecasts have not demonstrated infallible foresight, this should surprise no one. After all, the economist is at a marked disadvantage when compared to the physical scientist who is in a position to keep temperature, pressure, etc. constant in order to isolate and study a given variable. The economist can do no such thing and surely, *caeteris paribus* is a poor substitute for the controlled laboratory experiment Nevertheless, our understanding of how the economy functions has improved markedly over the past 20 years and this is a necessary prerequisite to more accurate forecasting.

Reader Schuchman's lack of understanding of the economist and his function indicates the continued need for informed articles on the subject such as those which have appeared during recent years in such publications as BUSINESS WEEK. . . .

BERNARD UDIS
KNOXVILLE, TENN.

## Inflation Pro & Con

Dear Sir:

In your Business Outlook of the current issue [BW—Mar.17'56, p17] I believe you have the right idea. I'm afraid that our dollar is running away with itself, the same as in 1920 with the German mark. And now the British pound is losing its value and there's bound to be inflation coming. And it may happen to our good dollar. . . .

I'm afraid that our labor wants too much for the little work it's doing and the dollar will lose its value and our government will have to print dollars. . . .

Keep up the good work, and may the business people listen to you for the benefit of our country. . . .

BERT LEVI
NEW YORK, N. Y.

Dear Sir:

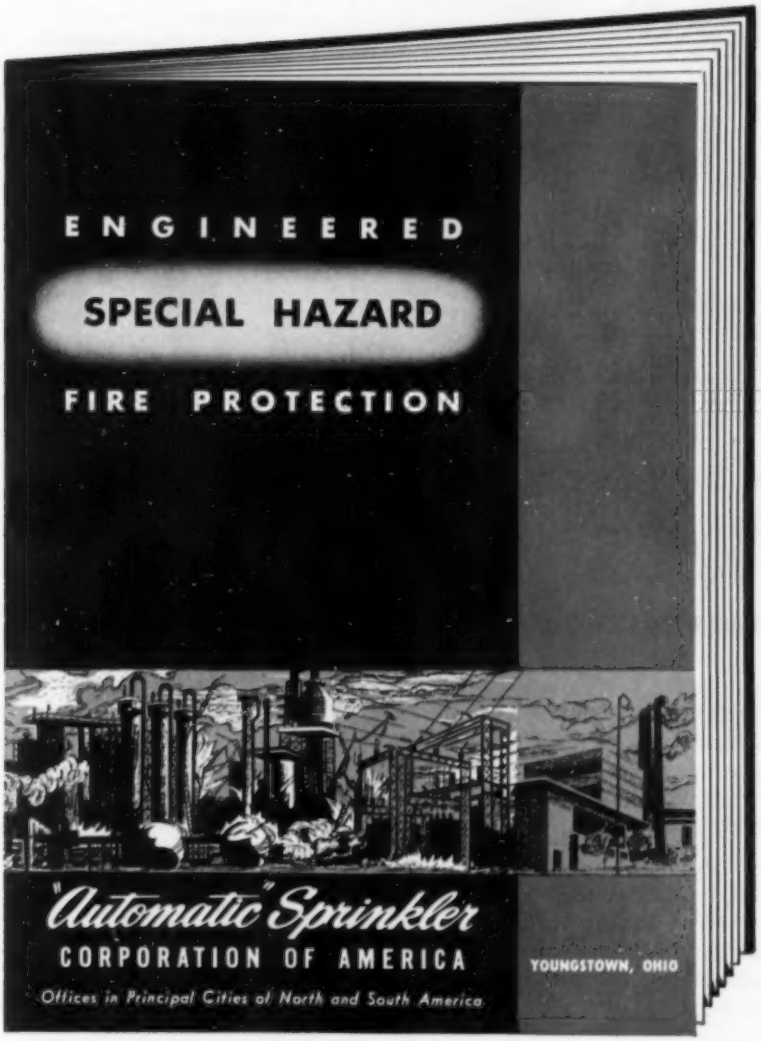
Alarmist insinuations indicated in your Business Outlook [BW—Mar.17'56,p17] are entirely unrealistic. . . .

I'm not even a student of finance and this talk of impending disaster exasperates me. . . . It apparently is fashionable as it was last year to warn of ultimate economic debacle.

There is nothing wrong with the current cycle of earning and spend-

# Send For This FREE Catalog!

***. . . 28-page illustrated booklet contains factual information on methods of fire detection, fire prevention, fire control and fire extinguishment.***




**Complete up to the minute data on:**

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  - Advantages of Rate-of-Rise Fire Protection
  - Flame or Flash Detection
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**Dept. 22 - Box 360 - Youngstown 1, Ohio**

Please furnish me with a copy of your Catalog 73—"Engineered SPECIAL HAZARD Fire Protection."

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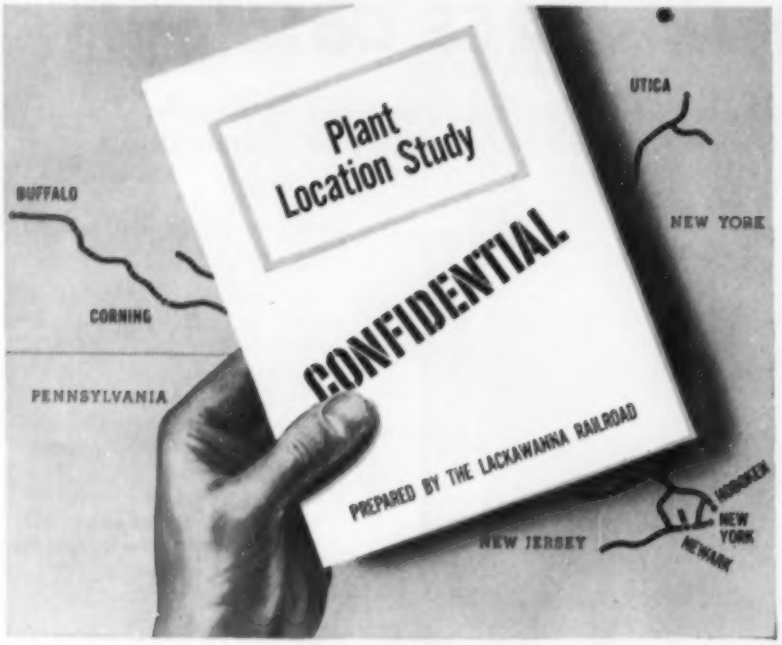


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# PLANT LOCATION STUDY

**based on your requirements!**

● There are many exceptionally fine manufacturing sites available in Lackawanna Land. Our Industrial Development Department is prepared to work with you in complete confidence in suggesting sites based on your requirements.

Without any obligation on your part we will prepare a complete Plant Location Study for you. This analysis will give you brief factual data enabling you to determine quickly which sites are best suited to your needs and worthy of further investigation.

We will also be very glad to send you our **current bulletin** without obligation. This lists existing plants for sale or lease, one of which may be an exceptional bargain opportunity for you. Write, or phone:

**Mr. C. F. Farmer, Industrial Development Department**
Room 1824, 140 Cedar St., New York 6, N.Y. • Phone BArclay 7-2500

# Lackawanna Railroad

*SHORTEST RAIL ROUTE BETWEEN NEW YORK, BUFFALO AND THE WEST*

ing—indeed a sound economy today consists of an interdependence of one on the other!

BOYD S. NEUBOURNE
NEW YORK, N. Y.

**• We cannot find any "alarmist insinuations" or "talk of impending disaster" in that Business Outlook. We warned that shortages of either money, materials, or manpower—or some combination of these—might hamper businessmen or consumers in their plans for 1956 spending. We mentioned a quickening of inflationary tendencies, but did not predict any such inflation that could be called an "impending disaster."**

## Big Ambitions

Dear Sir:

After having read so much in so many publications about the 20th Congress of the Soviet Communist Party, I couldn't help but be impressed by the over-all grasp of your interpretive article Big Ambitions Behind Soviet Tactics [BW—Feb.25'56,p26]. It appears to me that you have a full grasp of this subject and presented it in a fluent manner . . . .

WILLIAM H. DEPPERMAN
DIRECTOR OF PUBLIC RELATIONS
LINK-BELT CO.
CHICAGO, ILL.

## Financial Champ

Dear Sir:

Shame on BUSINESS WEEK for publicizing in Wall Street Talks [BW—Mar.3'56,p142] that the Metropolitan Life Insurance Co. is the world's largest non-governmental financial enterprise.

Actually, the Bell System, with assets of $14.5-billion, is the new financial champion in the solar system.

ARTHUR M. MARIN
NATIONAL CHAIRMAN
COUNCIL OF WESTERN ELECTRIC
TECHNICAL EMPLOYEES NATIONAL
NEWARK, N. J.

**• The Met, we said, was the world's largest non-governmental "financial" enterprise. Mother Bell is bigger, but it is not a "financial enterprise." Instead, it is a "non-financial enterprise." We have long used these terms, particularly in our annual Billion Dollar Club, to differentiate between such organizations as the life companies, banks, finance companies and the like, and industrial organizations such as the big manufacturing companies, railroads and the utilities.**

# outlasts ordinary plastic skylights...SIX-TO-ONE!

NEW *Granitized** **Corrulux**®

Proven conclusively with accelerated erosion tests conducted by independent laboratories!

Surface erosion by wind, dust and sleet reduces light transmission of ordinary plastic skylights by as much as 50% in 2 to 3 years. Now . . . **new** *Granitized* CORRULUX with super-erosion-resistance, tested against competitive panels, gives up to six times longer service life . . . lasting beauty and light transmission.

Don't buy **any** plastic panel until you have checked new *Granitized* CORRULUX. Flat or corrugated, shatterproof! Three skylighting colors for your choice of light transmission.

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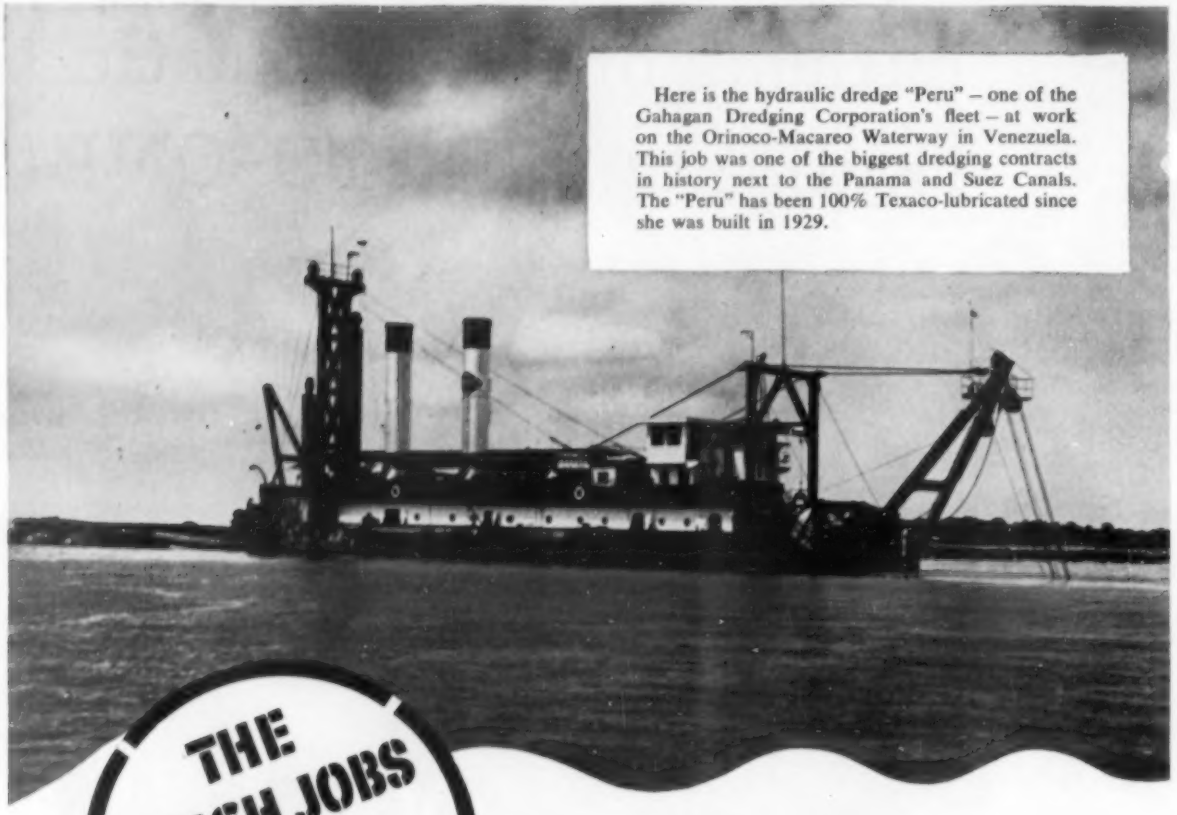

Here is the hydraulic dredge "Peru" – one of the Gahagan Dredging Corporation's fleet – at work on the Orinoco-Macareo Waterway in Venezuela. This job was one of the biggest dredging contracts in history next to the Panama and Suez Canals. The "Peru" has been 100% Texaco-lubricated since she was built in 1929.

**THE TOUGH JOBS GO TO TEXACO**

## 35-YEAR SERVICE STILL GOING STRONG!

GAHAGAN DREDGING CORPORATION is a Texaco user of long standing. For 35 years, Gahagan has relied on Texaco Lubrication and Lubrication Engineering Service for its hydraulic dredges and their attendant fleet – both in the United States and overseas. This continued use is the sincerest endorsement of Texaco Products and service that Gahagan could give.

★ ★ ★

GAHAGAN DREDGING CORPORATION is just one of the many famous firms which have achieved top results with Texaco. There are three good reasons for this wide acceptance: *field-proven* Texaco Lubricants, developed with the aid of the finest research facilities available . . . *field-experienced* Texaco Lubrication Engineers to advise on their use . . . and *fast, efficient service* from over 2,000 Texaco Distributing Plants in all 48 States. This combination can help bring production *up* . . . and costs *down* . . . in every major field of industry and transportation. One agreement of sale supplies all your plants wherever located. For details, call the Texaco Distributing Plant nearest you, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

**TEXACO**

**INDUSTRIAL LUBRICANTS**

# BUSINESS OUTLOOK

**Slackened demand for raw materials indicates Europe's boom is losing some of its zip.**

That, along with diplomatic uncertainties, provides something for American businessmen to worry about—even though it is pretty hard to work up very much concern about anything going wrong at home.

**Copper prices have been the most conspicuous sufferer** in world markets these last few days (though tin went into a tailspin, too).

About 10% melted off "premium prices" for copper in a week.

**Nobody's moaning except, perhaps, Chile and a few speculators.** Premiums were getting a bit fantastic; London Metal Exchange prices got more than 8¢ a lb. above New York, and the "outside market" here followed the London rise. Now that's over, at least temporarily.

**Unofficial quotations on copper still are at a premium,** of course.

**Custom smelters still get more than the big domestic producers.**

And, if you wanted to buy April futures to protect yourself against nearby needs, you'd pay 2¢ or so more than the "official" 46¢ price.

But if you were to go into futures calling for September delivery, you would pay about what the big domestic producers are charging.

This discount from nearby to distant futures mirrors the uncertainty that came over copper buyers in just a few days.

**Copper's comedown finds the trade here saying, "More healthy."**

Major U. S. interests disliked the runaway price. They were reluctant even to let their quotation go up from 43¢ to 46¢ when they did—and they resisted the still further boosts that could have been made.

The reason is simple: **They see competitive metals worming into their markets and face a tough job of winning back old users.**

Caution is necessary at this stage in appraising price developments in copper. Prices abroad have flopped before—and come back stronger than ever. This, too, could be a false turn.

**U. S. demand for the red metal is bound to remain strong.**

**Moreover, booming industry and the 46¢-a-lb. price will stiffen labor demands this summer**—raising the chances of another strike such as threw supply and demand so out of kilter last year.

Copper companies already are trying to backfire wage demands, saying in effect: "Don't ask so much that prices will have to go up, because that will lose markets and, in the end, cost a lot of jobs."

Labor problems in copper this year, it should be remembered, aren't to be settled in simple economic terms.

**The leftist Mine, Mill & Smelter Workers is being raided on a wide front. The union is set for a fight to retain its membership**—and proposes to win a list of benefits that will fortify the leadership.

**Industry's hiring plans from now to mid-May hold every promise of keeping mass purchasing power at a high level.**

The latest Bureau of Employment Security survey of its 149 major labor market areas prompts a prediction of a **"relatively brisk pickup."** All but 19 of the labor areas expect to participate.

Some of the improvement will be seasonal—in construction, lumbering, and food processing. But gains also are expected in durable goods.

—•—

**Steel companies,** pressing everywhere to meet demand, **are losing no time sending their ore boats up to the head of the Lakes.**

Inland dispatched its first on Tuesday, four days earlier than in 1955. Simultaneously, U. S. Steel announced that it was hopeful of getting the first of its fleet moving by weekend instead of Apr. 4.

Cold and snow at midweek, however, did nothing to improve prospects of getting the Great Lakes shipping lanes open.

**More iron ore—in a hurry—has become particularly pointed** now that scrap prices are rising again (BW—Mar.24'56,p20). Another bounce in scrap at midweek, in fact, put an added premium on high blast furnace operation to ease the pinch on scrap.

**Demand for steel seems absolutely certain to exceed mills' ability to produce throughout the second quarter.**

Everybody is trying to build inventory against (1) the price rise that is scheduled to follow the wage settlement, and (2) a strike that might precede the settlement (though few expect such a showdown).

**Assuming there is no strike, some question arises over demand after the price advance actually goes into effect.**

Would steel users' inventories then be a bit top-heavy?

Industry people say, "Flatly, no." They see a real revival in auto demand by then (for new models) to cushion any softness elsewhere.

—•—

**Bolstered by a record March quarter, the shoe industry is beginning to think of breaking 1955's full-year mark.**

The three months just ended saw 164-million pairs of shoes turned out, the Tanners Council estimates. That would be 9% better than the same 1955 quarter and would top any previous three-month period.

—•—

**Moderate reductions in textile activity, first visible in the synthetics, have affected cottons** where gray-goods prices have been giving ground. **And rayon tire-cord prices were cut this week.**

—•—

Industry's extraordinary demand for money now seems to be adding another factor to rising costs of operation.

**Interest rates on new bond issues are being marked up** (page 170). Moreover, New York banks raised their charges on loans for carrying securities this week—often a forerunner of higher costs on the money borrowed by industrial customers.



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WSW 5927

# Soft to touch—and beautiful, too

NO wonder our young lady is satisfied to just curl up and enjoy herself before taking to the road in her new convertible. It's the first time she's ever rubbed cheeks with soft, comfortable vinyl upholstery . . . and she *likes* it!

As the mileage builds up, she'll discover some other very pleasant facts about vinyl: Its durability is amazing . . . it outwears all other upholstery materials. It won't fade, crack or peel. And a pass of a damp cloth keeps it spotless.

But her big blue eyes will really pop when she discovers how soft and supple it stays, right around the calendar. And for that, she can say thanks to *plasticizers*, the flexibility ingredients in vinyl plastics.

We mention plasticizers because they're one of the many coal-derived chemical products we make for industry. While their principal role is keeping plastic products like upholstery, garden hose and vinyl floor tile flexible under all conditions, certain plasticizers also impart such special properties as resistance to heat, sunlight and oil in finished plastic products.

To meet these diverse needs, Pittsburgh produces one of industry's most complete families of vinyl plasticizers—*Pittsburgh PX Plasticizers*. And our research laboratories are constantly at work developing new and better plasticizers . . . and application practices that are more efficient and economical.

If your company uses plasticizers—or any other coal-derived industrial chemicals—let us acquaint you with the unique advantages of buying from Pittsburgh, *a basic and integrated producer*.

COAL CHEMICALS • PROTECTIVE COATINGS • PLASTICIZERS • ACTIVATED CARBON • COKE • CEMENT • PIG IRON

## CORRUGATED convention displays put up a good front for a fraction of the cost

Every year, thousands of convention-bound companies face the same harrying problem: what to do about a booth display. This new kind of display made of corrugated board provides an answer that should warm the heart of budget watchers everywhere.

Available in a wide variety of sizes, styles and color combinations, corrugated displays run in cost from under $100 all the way up to a deluxe one-third fraction of what the same display would cost made of heavier, more orthodox materials. In fact, the economies frequently make it possible for companies to take part in conventions they might otherwise feel compelled to miss.

This kind of savings is deceptive. It implies short life. But experience proves otherwise. In case after case, corrugated displays stand up through dozens of uses—equal to years of service for most conventioning companies.

There's an important side benefit too: saving in weight. This not only holds down shipping costs, but simplifies handling, assembling and packing—important considerations for the 1-man sales force at an out-of-town show.

Of course, the experience of the 1000-odd users of corrugated displays bears out the findings of the millions of users of corrugated boxes: corrugated combines strength, rigidity, lightness and impressive economy. Can you use corrugated? You'll find your nearby box-maker listed in your classified telephone directory under "Boxes—Corrugated."

Langston doesn't sell corrugated, only the machines that make it. Since 1902, these machines have led the field in efficiency and dependability. *Samuel M. Langston Co., Camden 4, N. J.*

THINK FIRST OF CORRUGATED

**LANGSTON** Corrugated Container Machinery

BUSINESS WEEK

MARCH 31, 1956

NUMBER 1387

# What Jinxed the Easter Trade

**● Retailers, who had hoped to beat last spring's record, blame the unseasonable lack of sales on two factors.**

**● First, blue skies and slightly milder days came too late to counteract the weeks of bad weather in most parts of the country.**

**● Second, Easter came too early—nine days ahead of last year.**

Over large sections of the U.S. early this week, sunny skies finally gave some hope that a long winter with a nasty hook at the end of it was on its way out.

But if the first hint of spring lifted the spirits of suburbanites still wading in slushy driveways, this was nothing compared to the lift it gave to merchants. After weeks of abominable weather, they could begin to hope that the Easter selling season would at least equal last year's volume.

This was a tough fight from the start. First of all, they had to beat a whacking good sales record achieved last year. Second, they started with the handicap of an early Easter, nine days ahead of 1955.

• **Uncertainty**—Whether a few balmy days would turn the trick couldn't be known until the records were all in. Besides, by weekend, the weather forecasts turned pessimistic again. Merchants tended to share the skepticism of the Portland retailer who said, "A sensational final week is needed to put the Easter season ahead of a year ago." On the whole, merchants in 20 cities across the country polled by BUSINESS WEEK early this week echoed this feeling.

There were, of course, outstanding exceptions, found mainly in cities where the weather has been good—Los Angeles, San Francisco, Nashville, Atlanta, Chicago, Milwaukee. Here merchants were pretty much satisfied with the level of sales. More typical were these observations elsewhere:

**New York City:** "The stores have lost millions of dollars they'll never get back again."

**Boston:** "Business is terrible."

**Pittsburgh:** "We got hit on the head by the weather."

**Philadelphia:** "Retailers are mighty unhappy people on the whole."

**St. Louis:** "No rush to buy."

**Dallas:** "Business stinks."

• **Chief Culprit**—Clearly, the weather was the chief cause of the gloom. A New York department store executive figured that Monday a week ago, the day of the city's blizzard, sales generally fell off 70%. A glance down the Federal Reserve System report on department store sales nationally shows that whereas during the week ending Mar. 10 sales were up 7% over the year before, for the week of Mar. 17 they were down 2%.

Flash reports for the week ending Mar. 24 show Philadelphia off 2%, other cities still off.

• **Sharing the Blame**—But was the whole showing due to the weather? The point is, Easter comes early this year. So, to equal 1955's record, department store sales would have had to beat last year's sales by 4% during the month of March. Actually, they were just barely doing that when the weather cut loose.

As this implies, retail sales so far this year, weather or no weather, have not been up to what the optimists expected. Total retail sales in February were running at an annual rate of $14.8-billion as against $15.3-billion a year ago. Department store sales so far this year have been running 3% ahead.

Those who had hoped for more might find this remark by a Dallas merchant sympathetic: "There is plenty of money. Prices are about the same. But the bulk of the consumers are in no hurry to rush out and load up on anything."

• **Inventories**—Meanwhile, merchants generally have been worrying about inventories, which have been climbing faster than sales. Department store sales, for example, were up 2% in January, but stocks were up 8% and stores had on order 12% more goods than a year ago.

While there are indications that some retailers put a check-rein on inventories because of the early Easter, more of them would agree with one Philadelphia merchant who admits they are "on the heavy side." Retailers are now counting on the few good days befor Easter to lighten their load. There is a fair prospect, however, that consumers will have a bonanza with clearance sales just after Easter. "Some super sales seem certain," Boston comments.

Again, the attitude toward inventories follows the kind of sales level that merchants have experienced. Where a Dallas merchant says frankly that his inventories are "too high," merchants in cities where sales have been good say they have no worries. "Inventories appear to be normal," reports a San Francisco retailer. "In good shape," is the word from Atlanta. A Chicago merchant says that inventories are even a little under last year. Columbus observes that "no one is complaining except the furniture dealers."

• **Quality First**—The pattern of consumer buying reported this year by merchants follows pretty closely the pattern of Easter buying in the past few years. Retailer after retailer agrees with the Columbus merchant who says, "They're more interested in quality and style than in price." Upgrading in buying is still a dominant trend.

Retailers here and there are concerned about the price level, but the picture is spotty. The main area of worry seems to be goods produced by industries affected by the new $1-an-hour wage minimum, particularly textiles and apparel from the South. But even here, things tend to balance out. An economist for a major chain of Department stores says that in recent weeks 15% of textile prices have risen about 3%, but another 10% have gone

down 3%. The rest have stayed steady.

Furniture prices are generally reported to have risen the past few months by 5% to 10%. Some retailers report an increase of about 5% in the prices of refrigerators and other heavy appliances. But again, other retailers report that this has been counterbalanced by distributors who, in order to unload inventory, have cut prices to retailers.

• **Same Pattern**—Other buying patterns follow those set in recent years. As far as clothes buying this Easter goes, a Houston merchant summed up the pattern with the remark, "The family clothes the kids, then the wife, and the old man probably gets a new shirt, tie, pair of socks, and shoes." In other words, children's and teenagers' apparel sales were reported to be good, men's clothing sales didn't raise a cheer anywhere.

As for women's apparel, sales varied. Suits and dresses didn't seem to go this Easter, but hats, shoes, and accessories did surprisingly well. Retailers across the country lay this to the new styles, particularly in hats and shoes. San Francisco commented favorably on the "deep brim" hats; merchants feel the new style interests women who haven't bothered with hats recently. A Portland merchant says shoe sales are benefiting from "all the color—lots of pastels and deeper shades, Wedgewood blue, red, and bright yellow."

• **Losers**—Furniture sales were reported mostly on the downside. San Francisco rates them as "only fair." Dallas says they're "at a standstill." Furniture people by and large are eying big inventories and hoping that a surge in home building will take them off their hands.

Appliance sales mostly bring about a shrug of the shoulders. Merchants generally say sales are mediocre, then complain about price-cutting, which, they say, makes appliances unprofitable to carry. Many merchants this spring are pushing the appliances aside and stressing do-it-yourself equipment and materials, garden tools, lawn furniture, and other outdoor goods.

• **Outstanding**—Consumer credit, despite all the worry it is causing economists, doesn't yet seem to bother retailers.

Here and there merchants say that they are tightening up terms, or think that people have overloaded and aren't ready to plunge again. But most merchants agree with the Midwestern retailer who says, "On the whole people are going into debt for what they want just as fast and deep as ever." In part, this has been stimulated by department stores, which have gone in heavily during the past year for revolving credit plans—or what one Boston merchant calls "revolting credit."

# Math Demonstrates It

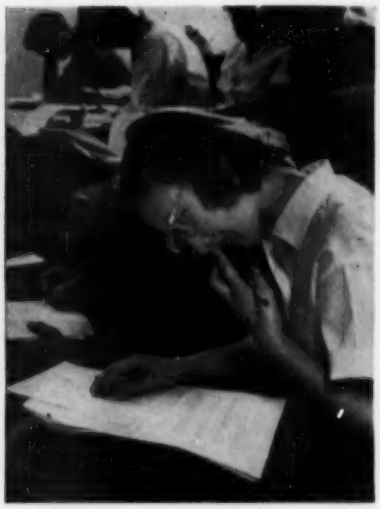
You can talk all you want about the decline of the three R's in public schools, but 'rithmetic is riding high in the Greater Toledo area. Last Saturday, 637 high school math students defied cold, raw weather, and the distractions of weekend socializing to take part in a mathematics tournament at the University of Toledo—not for valuable prizes but for the fun of the chase.

This is comforting news to industries needing ever more technical men and mathematicians. They have been upset by national figures showing a steady decline in percentage of secondary school students taking math. The same figures influenced the Greater Toledo section of the National Council of Teachers of Mathematics, which sponsored the event in cooperation with the university. They wanted to stir up interest.

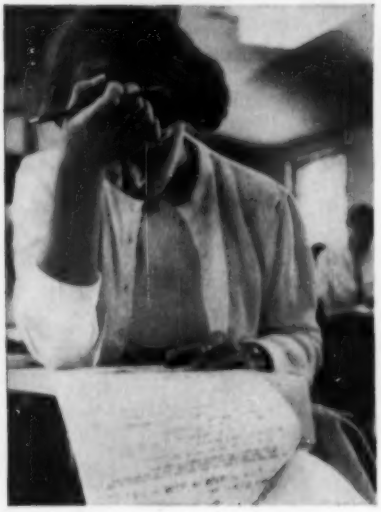
• **Surprise Enrollment**—When the contest was announced a month ago, therefore, the sponsors figured on not more than 50 or 60 participants. They asked high school math department heads to keep them posted on student interest, and were astounded a week ahead of time to find 450 signed up.

The organizers, who had planned on using one large lecture room at the university, hastily lined up seven or eight more rooms and enlisted the aid of the entire college math department.

Then the weather turned sour. Cold and snow moved into the area, and the sponsors thought attendance would be severely cut from the 450 level, since no formal registration or fees had been



**In self-imposed agony of concentration, high schoolers grapple with math posers.**



# Still Appeals to Youngsters

required. Last Saturday dawned with the mercury below 20F, with highways iced, and a raw wind blowing. Yet 637 entrants from 22 high schools showed up, one traveling more than 80 miles from Pandora, near Lima.

• **Problem a Minute**—Contestants were given eight-page mimeographed booklets containing about 80 questions, with 90 minutes to complete the test. Most of the questions were multiple-choice, rigged to penalize wild guessing. They covered all high school mathematics.

Three extra questions were tossed in as tie-breakers and a special challenge to the math wizards. For example, a variation of a brain-teaser so hoary that it is immortalized in Bartlett's Familiar Quotations:

"The combined age of Martha and Ann is 60 years, and Ann is as old as Martha was when Ann was one-fourth the age that Martha will be when Ann is as old as Martha is now. How old is Ann?"

• **Prize List**—The sponsors are busy picking winners, a boy and a girl in each class from freshman through senior and an over-all winner. Prizes are unpretentious: slide rules, handbooks, mathematical dictionaries donated by Toledo companies.

Contestants—some of whom were so confident that they came equipped only with non-erasing pens—said their interest was in competing for fun, not for big prizes. Results will be reported to their home schools, but not to count toward their grades.

P. S. Ann is 24 years old.

**SCHOOL BUSES brought students from Perrysburg and a Toledo suburb.**

**TO BEAT federal gas control, Texas wants more gas-using industries, like this Phillips Chemical Co. plant on Houston Ship Channel, to move into the state as an . . .**

# Answer to Gas Veto

The fire and fury that came right in the wake of Pres. Eisenhower's veto of the natural gas bill has dissipated and gas' clouded path of development is getting a little clearer.

In Washington, the outlook for legislation favorable to the gas industry is generally reckoned to be very dim—this year, next year, or for many more years. The consensus is that there'll be federal control of gas in interstate commerce for quite a while.

• **Ways Out**—And so, in Texas, king of the gas-producing states, the industry is coming up with a set of fresh ideas for getting its gas out from under federal control.

Probably the most dramatic of these ideas grows right out of the old cry: "Keep Texas wealth in Texas."

That's what Phillips Petroleum Co. is setting out to do right now. Alongside the site of its subsidiary, Phillips Chemical Co., on the bank of the Houston Ship Channel (picture), it has acquired a 950-acre parcel of land. This week, Celanese Corp. of America announced it has taken up part of this site to build a large polyolefin resin plant that will use Phillips' ethylene as a raw material.

Phillips is determined to avoid, whenever it can, selling its gas in interstate commerce—where it would be subject to federal control.

• **Promoters**—Most of the drumbeating for this method of assuring intrastate consumption of gas in Texas is coming from the Texas Independent Producers and Royalty Owners Assoc. and from the Texas Railroad Commission.

TIPRO, throughout its campaign for the vetoed natural gas bill, kept announcing: "If the bill doesn't pass, we'll do all we can to keep Texas gas for Texas."

Texas Railroad Commissioner, Gen. Ernest O. Thompson, has been plugging the same line since the veto. "Two-thirds of our reserves are already committed under long-term contracts, and most of these contracts take Texas gas out of the state," he says. "If we're to be saddled with federal control, then let's have industry come to us for the remaining uncommitted third of our reserves and for the gas we'll discover in the future."

• **Small Men's Plans**—Texas' smaller producers are with TIPRO and Commissioner Thompson almost to a man—in principle, anyway. So far there's no evidence that any of them has done anything concrete since the veto to attract gas-consuming industry into the state. But the long-term trend is clear: More and more you can expect to hear of deals between the smaller producers and incoming industry.

These deals probably will be like the one that Glenn McCarthy made a few years ago with du Pont Co. Du Pont wanted to build a gas-consuming chemical plant near a gas source. At Orange, Tex., McCarthy had a supply of gas available. So the two entered into an agreement under which (1) du Pont built a pipeline to tap McCarthy's production; (2) over a period it turned the pipeline over to McCarthy; and (3) McCarthy paid du Pont in gas for its outlay on the pipeline.

The industries you can expect to grow up in the gas-producing areas in the next decade are: petrochemical plants; factories whose power demand is high, like Alcoa's aluminum operation at Rockdale, Tex.; and carbon black plants, which, like petrochemical outfits, use natural gas both as a fuel and a raw material; and electric power companies, which are turning more and more to natural gas as a fuel.

This general line of development for the smaller gas producers would have come even without the gas bill veto, of course. But the veto probably has speeded the development by crystallizing the smaller producers' planning and stepping up the promotional work of TIPRO and the Texas Railroad Commission.

• **Majors' Stand**—Bigger producers—the "majors" like Humble Oil & Refining Co. and Continental Oil Co.—seem likely to follow the same line over the long term, too. But over the short term they're not likely to push the "Texas gas for Texas" line so strongly as the smaller producers. Most of them have long held great supplies of gas in the ground. The veto hasn't caused them to change their idea of sitting on these reserves.

They know that when their big gas fields were brought in, gas was worth only some 3¢ per 1,000 cu. ft. Today, it's worth from 8¢ to 18¢ per 1,000 cu. ft. "Why should we open up our reserves and sell it now," their reasoning runs. "Gas could easily go to 25¢ per 1,000 cu. ft. within a decade."

• **Third Way**—Finally, there's a third group of producers who see a way to move their gas interstate without running into the Federal Power Commission's controls. These producers want to liquefy their gas, ship it north to the Chicago stockyards, for instance—where liquefied gas, while returning to its original form for fuel, provides refrigeration whose value counterbalances the cost of liquefying it.

• **Legislative Blocks**—Back in Washington, three main factors are responsible for the dim hopes for a new gas bill:

The Eisenhower veto of the last bill, and the planned investigation of lobbying have created an anti-oil atmosphere that will take a long time to dispel.

The leadership on both sides in Congress will go warily on gas for a long time. The Presidential veto was a cruel blow to their prestige.

The third factor, as some Washington observers see it, is a telling one for the long term: Once such a regulatory agency as FPC gets its hands on an industry it's very reluctant to let go.

# Toppling Colossus For a New Regime

For a quarter of a century—two-thirds of the USSR's life span—the "heroic" figure of Stalin has symbolized Communism. Communism and Stalinism have been interchangeable words even through the past three years since Stalin's death.

Now Stalin's heirs are denouncing him as a murderous tyrant. They're destroying the myth built up around him so that they can remove Stalinism from the Communist vocabulary.

Probably no more momentous decision has been taken in Russia since the Bolsheviks decided to seize power in the revolution of 1917.

Almost certainly it means that the era of Stalinism is over—that revolutionary crisis will come in Russia if any one man makes a fresh attempt to wield absolute political power in the name of the Communist Party.

Quite certainly it means that Russia's present rulers have opened up a barrel of eels—that no matter what comes out they cannot put the lid on again.

• **Kremlin Mystery**—Why they decided to shatter the Stalin myth, nobody outside the Kremlin can know precisely. Where their move will lead, not even the men in the Kremlin can know. But all over the world every bit of evidence is being examined minutely—reports of Khrushchev's off-the-record speech to the 20th Communist Congress in which he really opened up the anti-Stalin campaign; reports of trouble in Soviet Georgia (Stalin's birthplace); Deputy Premier Mikoyan's admission in India that some confusion in Russia was to be expected; this week's editorial in Pravda—its first on the subject—giving directions to the Communist Party on how to handle anti-Stalinism.

Explanations that the West has so far heard of the Kremlin's effort to destroy Stalin are clearly inadequate. Suggestions that mere rivalry within Khrushchev's group caused the move or that the Red Army alone forced the Kremlin's hand don't go far enough.

The theory that Stalin is being dumped for foreign policy reasons is the least likely of all. While the move may, in time, ease Russian efforts to soften up the Free World, the Soviet leaders wouldn't be running great internal risks just to give themselves a seductive new look abroad.

• **Deeper Picture**—U.S. and foreign Russian experts are looking deep into the historical evolution of Soviet society for the real reasons. Piecing together their tentative evaluations, you get this picture:

**When Stalin died, his heirs concluded that they couldn't permit another absolute dictator to take over inside the Kremlin.** None of them felt that he himself had power enough to grab Stalin's mantle. Each was fed up with the intrigue and terror of Stalin's rule and was determined to block any return to it—especially since they themselves would be the first victims of a new Stalin.

**The complex Soviet economy couldn't be run any longer on Stalinist lines without absolute power resting in some single leader's hands.** If force was no

**KHRUSHCHEV** (clapping) leads drive to debunk Stalin and his one-man rule.

longer to be the primary incentive for economic progress—and a collective government couldn't use force so ruthlessly as did Stalin—other incentives would have to be found. There is evidence that some of the new leaders of Russia concluded even before Stalin's death that his methods were obsolete—that they had successfully forced the painful change from an agricultural to a modern industrial economy, but that they weren't suitable for running such an economy.

**That made it necessary to create an atmosphere in which the managerial class would be able to show individual initiative and responsibility.**

**It would take a brutal shock treatment to convince the managers, the scientists, and other professional people that Russia really would be run on new principles.**

An important subsidiary factor is the recognition by Khrushchev and his associates that East and West have reached an atomic stalemate. Almost everything the Soviet leaders have said and done during the past year indicates that they accept this stalemate. Now they are taking the opportunity of turning their attention inwards. Apparently they guess that the stalemate frees them sufficiently from external pressures so that they can risk a period of internal confusion while they try to put the USSR's political and economic structure on a new basis.

• **Deliberate Loosening**—Stalin's heirs presumably decided very soon after his death to downgrade him gradually. All the tentative steps taken since then to loosen the machinery of terror and central domination—the reduction in secret police terrorism, the emphasis on legalism, the decentralization of economic planning, the new look in foreign policy—appear now to have been cautious experiments to test the temper of the Soviet people. Also, they may have been intended to accustom the people to a looser rein, prior to destroying the Stalin myth.

Clearly Khrushchev's group is taking tremendous risks in pitting itself against Stalin's ghost. In destroying a basic Communist myth—the infallibility of Communist leadership—the Soviet leaders have sowed doubt in a totalitarian society whose major strength was certainty.

For 30 years Stalinism was the Soviet way of life, the state religion that infused all the institutions of Soviet society and the thinking of the ruling bureaucracy and the Russian youth.

• **What Can Follow**—It's possible that the dynamism may go out of the Soviet economy. The carrot may not work so well as the stick. It may prove impossible to develop individual initiative as a substitute for force. At the very least, there is bound to be a long period of political and economic confusion that could be expensive economically.

And if Khrushchev is able to inject more initiative and individual responsibility into the economy, the new attitude may slop over into the political field, undermining the authoritarian foundations of the regime. The result might be anarchy—or a military dictatorship. Only the Red Army has the power and prestige today to supply a new absolute ruler.

Abroad, the exposure of Stalin already is having a shattering impact on foreign Communist parties. There is resentment at having been duped and this is bound to be stronger among foreign Communists than among Russians, since they often went further in unquestioning devotion to the Stalin myth. It's a safe bet that the Communist parties abroad will be destroyed as effective instruments of revolution for some time. There is every likelihood that they will lose membership wholesale.

• **Hedged Bet**—Despite the risks seen by outside observers, the Soviet leaders seem supremely confident of their ability to win their gamble. Perhaps the confidence arises from the fact that the curve of Soviet industrial progress is still climbing sharply, that Soviet military might is at an all-time high compared to the West's power, that Moscow's campaign to win friends abroad is going well and opening new fissures in the Free World. With these successes in hand, Khrushchev may think he has plenty of time to win the support of the managerial class by giving it more freedom and prestige.

• **Adaptation?**—Or it may be that Khrushchev has no intention of switching very far from Stalinism, that he regards his policy as simply a deft, flexible, and intelligent adaptation of the Stalin line. In his off-the-record speech, Khrushchev didn't get into any discussion of Stalin's basic policies, such as the drive for heavy industry at the expense of consumer goods. And right after the congress he made two Stalinist-looking moves: (1) grabbed control of the party machine that supervises the Russian Republic, which constitutes more than half of the USSR; and (2) started pushing to turn the collective farmer from a Russian peasant into a Communist wage earner. By concentrating on Stalin's madness as the main reason for his purges Khrushchev may hope to avert discussion about basic Stalinist policies. It's possible that he would regard such a discussion as damaging to his own top position in the collective leadership.

But it seems more likely that the Soviet leaders are putting a parenthesis around the whole Stalin period, treating it as a deviation from the true course of Communist development.

**The Golden Key, a three act play,**

# Commerce

Richard Rodgers, of Rodgers and Hammerstein, a cagey operator with a bit of experience in theatrical openings, once announced that even if he had a can of beans to open, he would open it in Boston.

The U. S. Dept. of Commerce—while disclaiming any intention of competing with Rodgers—followed suit last week with the Boston opening of the Golden Key, a show devoted to explaining how the department's facilities and services can help small businessmen.

Written by admen at New York's McCann-Erickson agency, the business show stars some of the Commerce Dept.'s top brass. The amateurs are assisted by Broadway's Ray Middleton who plays the narrator, the Yankee Trader. The show was presented to an audience of New England businessmen and a dozen schoolgirl refugees from a course in business economics.

• **In Three Acts**—The curtain rises on a New England businessman, the president of the mythical Northeast Mfg. Co., making a pilgrimage to Washington to discover how to expand his marketing program. The Commerce Dept. has the answer—a shapely blond who knows her way around the government archives. Digging through the files,

**shows how the government can lend a helping hand to small businessmen.**

# Dept. Slaps on Grease Paint

she and her boss find statistics on the availability of labor, county business patterns, city business patterns, census reports, income data, and just about every other wanted number except the one that rings her telephone. Application of the statistics and market research case material to its own situation rings down the curtain on Northeast's problems.

Act II introduces the president of Peerless Products, producers of Pesticide. The Peerless prexy hears his friend at Northeast extol the services of the Commerce Dept., strolls into its Boston office to investigate foreign trade possibilities. Against Ray Middleton's running commentary on the history of New England's foreign trade, the Peerless president discovers that Commerce has all the answers. And the answers bring results. A Peerless salesman rushes off with his Pesticide to save Rangoon's rhubarb crop, and the U.S. Commercial Attache there swings into action to assist him.

Act III opens on a group of New England businessmen wailing Medea-like over the state of their town's undiversified economy. But rubbing the Golden Key brings back our genie the Commerce Dept. As the businessmen soon learn, the department has all the answers. With the help of the Small Business Administration, the town can find new products to manufacture, new sources for financing, new markets. The Golden Key opens the door to planned industrial parks—with the town's new industries sharing the results of the government's $2.5-billion annual research budget. The town is happy, the businessmen are happy, and the Commerce Dept. is pretty smug.

• **Southern Ham**—While the birth of a sales campaign is less interesting dramatically than the Death of a Salesman, the Commerce Dept. thespians put on a more interesting show than might be expected. The only jarring note was the miscasting of a top department official with a thick Southern drawl as a Yankee businessman. Some New Englanders in the audience shuddered at the nightmarish thought that the South was sending him North as more surplus labor in exchange for the industries the South has spirited away.

• **Second Show**—The Golden Key isn't the Commerce Dept.'s first venture behind the footlights. In 1954, Detroit saw a previous production, and as a direct result, 23 new businesses were started in Michigan.

Last week, Commerce Secy. Sinclair Weeks chose his home state for the opening of the department's latest production, hoping that some of the 40,000 New Englanders invited would be inspired to absorb some of the area's labor surplus.

But Weeks and his associates had a couple of hurdles to take before they could expect results. The first was the notorious apathy of any Boston theater crowd—there were not more than 500 in the audience. The second problem was presented by the battery of Democratic criticism that greeted the advance notices of the play: A "Three-Act Boondoggle," Democrats called it. However, political criticism won't deter the department from taking the play on tour.

• **Angels**—In Boston, Commerce tied its theatricals in with a three-day exhibit of more than a hundred new ideas produced by government and industrial research. Sponsored by a committee headed by the six New England governors, in cooperation with the U.S. Commerce and Defense Depts., the exhibit is oriented toward publicizing ideas, techniques, machinery, and processes that might be of help to small business.

## Here's the Lineup of Major Air Weapons

### Bombers

**U S A**

The U. S. heavy bomber, with intercontinental range, speed above 600 mph., service ceiling over 50,000 ft. Powered by eight J-57 jet engines of 10,000-lb. thrust each. Production now four per month, to rise to 17 a month in about 18 months. About 50 are in operational service.

U. S. medium jet bomber, with combat range of about 1,500 mi., service ceiling over 40,000 ft., speed in excess of 600 mph. Powered by six jet engines of 6,000-lb. thrust. In heavy-volume production. More than half of Strategic Air Command's 50 combat wings—45 planes to a wing—are B-47s. This means we have at least 1,125 B-47s.

### Interceptors

Our latest supersonic, all-weather interceptor, now in early stages of production.

**U S S R**

The Soviet heavy, with about the same range and speed as our B-52. Powered by four jet engines of 15,000-lb. thrust each. Current production is 12 per month, to rise to 25 per month in much less than a year and a half. About 70 are already in service.

*Figures above are estimates.*

Russia's medium-range jet bomber, comparable in performance to our B-47 but probably with a higher service ceiling. Far fewer Badgers than B-47s are in operation.

*Figures above are estimates.*

Russia's opposite number of the F-102, comparable in performance.

# The Senators' Problem: How

Next week, in Washington, a five-man Senate subcommittee will be set for a series of hearings that may:

• Reveal facts about U. S. and Russian military power that could force a complete revision of our defense program.

• Present the Democratic Party with a dark-horse candidate for President.

However, it may go the other way, too. The end results may be: No change in the defense program, and a hopeful candidate headed for oblivion.

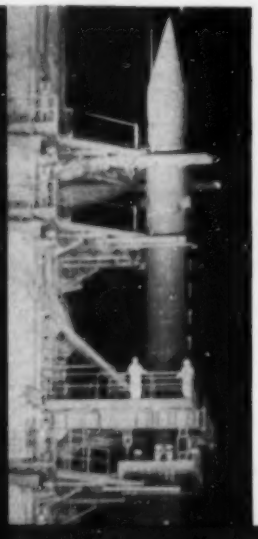
For nearly a year, Sen. Stuart Symington (cover) has been calling for a Congressional investigation of the Eisenhower Administration's defense program. He charges that the U. S. lags behind Russia in developing and producing jet aircraft and ballistic missiles, that the Administration has deceived the public with its claims of U. S. military superiority.

Last May, massive formations of new Soviet supersonic fighters and jet bombers—more and better planes than we have now, say the critics—were flown ostentatiously over Moscow. In flexing its aerial muscles before a crowd of foreign observers, Russia showed it had made a startling spurt in its race with the U. S. for military supremacy. Later, too, unconfirmed reports leaked out that the Russians had fired 900-mi.-ballistic missiles in Siberia.

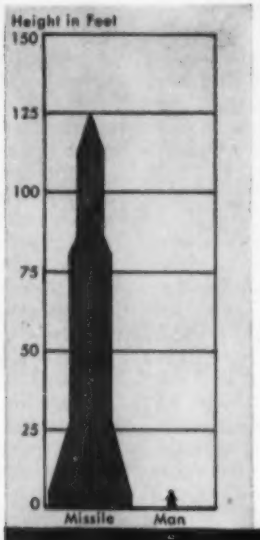
Next week, Symington gets a chance to make comparisons between U. S.

## in Competitive Race Between U.S. and U.S.S.R.

**USA**



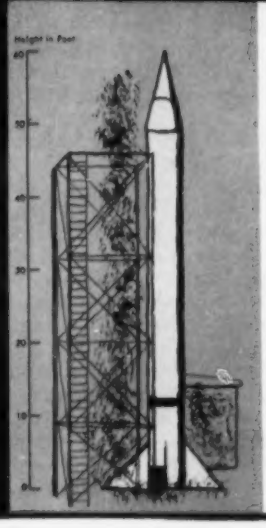
**Production has begun on 250-mi. Redstone missile (left) from which longer-range IRBMs will be developed. Redstone is a single-stage rocket, stands about 60 ft. high when upended. Douglas Aircraft is developing the 1,500-mi. Thor for the Air Force, and Chrysler Corp. the IRBM 2 for the Army and Navy. Neither is in production.**

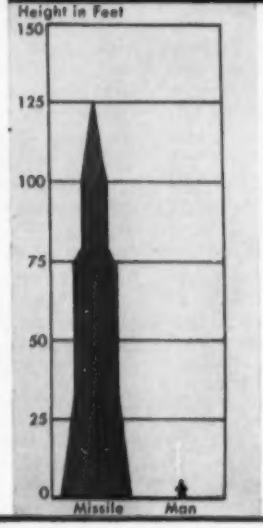



**Two 5,000-mi. missiles are in the research stage: Convair's Atlas and Glenn L. Martin's Titan, both for the Air Force. Prototypes of Atlas components are being produced. Atlas will be a two-stage rocket projectile.**

### Missiles

**USSR**






# Close Is the Race?

and Russian airpower (summary above). He heads a special five-man Senate Armed Services subcommittee with broad authority to inquire into military airpower policy.

This week, the Pentagon moved to take some of the sting out of this criticism. Secy. Wilson named Eger V. Murphree, president of Esso Research & Engineering Co., as his special assistant to "direct and coordinate" the ballistic missile programs. The press has tagged Murphree as a new missile "czar." But it's doubtful that he will get authority to direct missile development on his own. When he gets in a tight spot he'll still have only the same appeal to Wilson as the service secretaries.

• **Partisan Issue Aim**—The Symington investigation is being billed as a full-dress, open debate on defense policy—the first time this has been a partisan political issue since Korea.

Equally significant is the fact that it provides the strongest limelight yet for a man who is being talked up as a dark-horse candidate for the Democratic Presidential nomination. Except for his speeches on airpower—from his background as a former Secretary of the Air Force—Symington has had only one moment of prominence during three years in the Senate. That was when he bucked Sen. Joseph R. McCarthy during the 1954 hearings, and most observers thought he didn't show up too well.

• **More Money**—The investigators are looking for a hike in Air Force appropriations. Senate Armed Services Committee Chmn. Richard B. Russell (D-Ga.), who set up Symington's sub-

committee, says he will seek a $1.5-billion increase in the Air Force budget for 1956-57, on the basis of the latest reports of Soviet air progress. This is roughly what the Administration cut out of the service's original request for funds; as submitted to Congress, the budget asks $15.4-billion in new money.

## I. Political Slant

On the heels of Adlai Stevenson's setback in Minnesota, a former Democratic national chairman called Symington "the kind of dark-horse candidate to whom the convention might swing." In this light, Symington's investigation takes on added significance. Political chieftains will be watching closely to see how he handles the probe. It could well make or break him as a national political figure.

Right now, he has a lot of appeal. He is a border-state moderate whom Southern conservatives could swallow; at the same time, he has nothing in his record to antagonize the party's liberal wing. This week, the Missouri state committee unanimously endorsed his candidacy for the nomination, subject to ratification at the party's state convention in May.

In background and appearance, Symington is an aristocrat. He comes from a prominent old Maryland family, moves easily in society circles, is tall, handsome, courtly in bearing (cover picture). But when he moved into the Missouri Senate race in 1952—his first try for political election—he turned on enough homespun charm to beat a Truman-backed candidate easily for the Democratic nomination, then to beat the Republican incumbent by 150,000 votes while Eisenhower was carrying the state by 30,000. As part of his campaign to be folksy, he dropped his initial "W" (for William).

## II. Bill of Particulars

Symington's line of investigation of defense policy is clear. "We want to find out," he says, "whether the relative air strength of the U. S., present and planned, is adequate—as against Russia's estimated strength—to be able to take a sudden, devastating nuclear attack and then come back to destroy the possible enemy."

Symington will try to show that the Administration's defense program is geared more to the fiscal goal of a balanced federal budget than to actual military requirements.

Fundamentally, Symington's fight with the Administration boils down to the question: How much defense is enough?

• **Live Issue?**—If Symington wants to make a splash, a lot of experienced politicians think he has picked an unrewarding subject. Right now, the defense issue is not exciting much interest except among the experts. The question of whether we have as many planes as the Russians pales when the diplomats talk up disarmament and nuclear stalemates, and when the domestic front happily spouts an economic boom.

More than that, the senator's basic problem is formidable: He has to buck Pres. Eisenhower's personal eminence as a military leader.

The senator's supporters, however, argue that he probably knows more than Eisenhower about the quality and quantity of U. S.-Soviet airpower. They hope the inquiry may show that the Eisenhower team is just spoon-feeding the facts of Russian air progress to the President—because of the dictates of both time and politics. Indeed, says one Symington friend, "one of the senator's audiences is the President himself."

Those who defend the U. S. position lay heavy stress on quality. They claim the U. S. is ahead of the U.S.S.R. qualitatively, and don't even concede a measurable lag in quantity.

• **Line of Attack**—Symington and his backers are building this line of attack:

• A host of Air Force brass—from Gen. Nathan Twining, the chief of staff, and Gen. Curtis LeMay, head of the Strategic Air Command, down through the ranks of other combat command leaders—will testify under oath. Like good soldiers, the generals up to now have not publicly criticized Administration military policy. But, under oath, they might say they're not getting all they need to build up a mightier force than the Russians.

• Trevor Gardner, former Air Force Asst. Secy. for Research and Development, will be asked to tell exactly why he quit. For the most part, he backs up Symington's charges. Gardner is dissatisfied about the sums of money earmarked for research and development, the low rate of B-52 output, and the priority and organization set up for the ballistic missile program.

Symington thinks this line of investigating will pump life into a political issue that's pretty limp right now.

• **Staff Support**—Symington will have a strong right arm in Sen. Henry M. Jackson (D-Wash.), who has repeated most of Symington's criticism in the past. They will be offset by Sen. Leverett Saltonstall (R-Mass.), the Administration's defense spokesman in Congress, who has called Symington's charges "extreme and excessive."

Wall Street lawyer Fowler Hamilton, a onetime Air Force officer, has been named the Symington subcommittee's counsel. Aiding him is the experienced staff of the Senate Armed Services' preparedness investigating subcommittee, which has acted as Congressional watchdog over the defense program under Senate Majority Leader Lyndon B. Johnson.

## III. The Calculated Risk

Six years ago, defense planners figured that the period of maximum war risk was 1954-56. They set up military production schedules aimed to meet this threat. As the Korean fighting slackened and the danger that the brushfire war would become a global one subsided, Washington began to discount the theory of a period of maximum danger in its long-range defense plans.

The new strategic thinking fitted in, too, with the incoming Eisenhower Administration's aim of cutting government expenditures. So production schedules for some military goods were reduced, others stretched out. The Administration set its sights on a fairly stable level of military spending geared for "the long haul."

• **"Reasonable" Level**—The new goal was to maintain a "reasonable level" of defense indefinitely, to avoid a costly series of fast buildups and slowdowns in military effort that would reflect fleeting chances in world affairs. Actually, this policy was being pushed by Defense Secy. Robert A. Lovett when the Eisenhower Administration took over.

As the Eisenhower defense policy began to shape up, two other elements stood out:

• Strong beliefs that military power must be delicately balanced with the economy's ability to produce and expand, that a prosperous economy is as vital for a cold war as military forces are for a hot war.

• Reliance on the "massive retaliatory" ability of the Strategic Air Command to deter aggression. Tied to this was the feeling that an increase in SAC's size would not necessarily provide any more deterrent power.

Air Force Secy. Donald A. Quarles puts it like this: "If we possess sufficient striking power, of the utmost quality, to penetrate defenses and utterly annihilate an aggressor, we do not need twice that much simply because he builds greater numbers. You cannot with advantage blow a man's brains out twice."

• **Slow and Steady**—Eisenhower policy is based on the premise that there is no immediate danger of a shooting war. Production of B-52s—and other new aircraft—is being kept below full capacity. The objective is to keep production lines running at a steady rate—not to grind out the maximum number of planes at one time, then shut down production lines when final deliveries have been made.

The same goes for research and de-

**FOR SIXTH CONSECUTIVE YEAR**

# *Sinclair Sets New High Records*

**In 1955, Sinclair Oil Corporation and subsidiaries, *for the sixth consecutive year*, set new high records in:**

1) **Production of crude oil**
2) **Pipeline and Marine Transportation**
3) **Volume of crude oil processed at 7 domestic refineries**
4) **Sales of petroleum products**

Net income was $80,709,954, a gain of 8.1 per cent over 1954's earnings of $74,623,256.

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The quarterly dividend rate was lifted in October, 1955 from 65 cents to 75 cents per share.

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Long term debt was reduced by $74.5 million to $248.7 million. Ratio of long term debt to total borrowed and invested capital has been reduced from 36 per cent to a present figure of 22 per cent.

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Production of crude oil and other liquid hydrocarbons averaged 155,861 barrels daily, up 7.5 per cent. The vigorous program of exploration and production in the United States, Canada, off-shore, Venezuela and elsewhere is continuing in 1956.

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Significant improvements in processes and products emerged from the Company's Research Laboratories at Harvey, Illinois and Tulsa, Oklahoma.

*Copy of Annual Report on request*

**SINCLAIR** *A Great Name in Oil*

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velopment of new weapons. Pentagon officials argue that pouring more money into projects is no guarantee that more progress will be achieved. Says one official: "An elephant's gestation period is two years. You can pour in all kinds of vitamins, but you don't decrease gestation time. It's the same with complex new weapons like the intercontinental ballistic missile. Putting in twice as much money does not mean development that much faster."

• **Hard to Answer**—For the most part, Administration officials have publicly brushed off Symington's charges of U. S. military inferiority. Asked recently what he thought of the senator's investigation plans, Defense Secy. Charles Wilson said: "I hope he finds out that he doesn't know as much about it as he thinks he does now." The Joint Chiefs, at their Key West meeting, apparently sought no significant changes in the program.

Top Pentagon officials hope that as much of the investigation as possible is held behind closed doors. They say they can't publicly give detailed answers to allegations of a U. S. lag on the ICBM and long-range bombers. They explain it this way: If we affirm or deny specific claims of Russian strength, we let them know how good our intelligence is; if we do the same on estimates of U. S. forces, we validate for the Russians their own unconfirmed intelligence data.

Says one official: "We appreciate that in a democracy the people have the right to know. But how do you draw the line at a point where you don't compromise security. We've been hamstrung by Symington's charges. If we try to answer him, we give away valuable information. If we don't, his innuendos go unchallenged."

## IV. Risk Too Great?

Symington argues that the threat posed by Russia's latest air gains has knocked the props from under Administration policy. His point is this: that a 1,500-mi. ballistic missile in the hands of the Russians—which he claims has been or is about to be tested by them—would bring SAC's network of overseas airbases within Russian fire.

He wants the Administration to halt what he calls "business-as-usual" in arms production and to put B-52 output and ballistic missile research and development on a crash basis. In addition, he wants the Defense Dept. to patch up, once and for all, the interservice squabbles over guided missiles that some people feel are holding back missile development.

• **Air Brass Backing**—Air Force partisans are backing Symington to the hilt. Air Force generals, and other service brass, too, look to the upcoming probe as a place to air their discontent with the restraints that the civilian secretaries, particularly Secy. Wilson, have put on the uniformed organization.

Civilian control over the uniformed brass is one of the major changes that the Eisenhower Administration has made in the Pentagon, and that control is tighter now than ever before.

There are rumors of an Air Force cell grinding out material for Symington to throw at Defense Dept. officials during the hearings.

• **The Size-Up**—In recent appearances before Congressional committees, the Air Force chief, Gen. Twining, has already revealed new details on relative U.S.-Russian aircraft strength:

• Russia has more heavy jet bombers than we have, and is expected to maintain the lead under current production schedules. Russia's IL-38 Bison is right up with the USAF's B-52 in performance ratings (pages 30, 31).

• The U.S. has more B-36s—a slower, piston-engined, long-range bomber—than the Red Air Force's Bear, a turboprop heavy bomber. But the Reds could pass us by default within two years, since we are halting B-36 output and do not make turboprop bombers.

• The U.S. has "many more" B-47s than the Russians have Badger medium-range jet bombers.

• Russia has "thousands more" light jet bombers, their Beagle, than the USAF's B-57.

• Russia leads by "thousands" in numbers of jet fighters.

• The U.S. leads in all-weather fighters, but Russia "could close this gap and outnumber us in the next two to three years." Russia's Flashlight is comparable to U.S. planes now operating.

Twining sums up: "[The Russians] have overtaken us in quantity, or can overtake us, in all categories of warplanes except . . . the medium jet bomber. . . . Our counter to this quantity of force has been quality—better airplanes, better weapons, better airmen. It is in quality that we have been able to stay ahead. However, the Soviets are now closing the quality gap. This concerns us much more than comparisons of numbers."

In his evaluation, Twining passes over the Navy's 12,000 aircraft, says they would "have little effect on the air battle" because they would be tied to "tasks such as control of the sea or support of surface forces."

• **Missiles**—On guided missiles, the comparisons are even more clouded. Air Force Secy. Quarles says guardedly that "we are ahead of the Soviets in the . . . field as a whole, [but] we know that they have emphasized the ballistic line and we would not be surprised to find close competition in this field."

And Rep. George H. Mahon (D-Tex.), who heads the House Military Appropriations Committee, waters down Democratic criticism of the missile program. "No one can prove with complete accuracy who's ahead on ballistic missiles," he said last week. "Neither Russia nor the U.S. has an effective IRBM or ICBM, so it's hard to evaluate."

U.S. ballistic missile projects are already on a top-priority basis, Quarles says in answer to demands for a speed-up in effort. There are four projects under way (pages 30, 31): the Air Force's Convair "Atlas" 5,000-mi. ICBM, Glenn L. Martin "Titan" IICBM, and Douglas Aircraft "Thor" 1,500-mi. IRBM, and the Army-Navy's IRBM 2, in which Chrysler Corp. is working with the government's Redstone Ordnance Arsenal. The Ramo-Wooldridge Corp. pulls the strings together on the Air Force projects by furnishing what Quarles calls "systems engineering and technical direction to more than a dozen major contractors."

## V. Who Is Symington?

Symington is a businessman turned bureaucrat turned politician. In each career, he has had success.

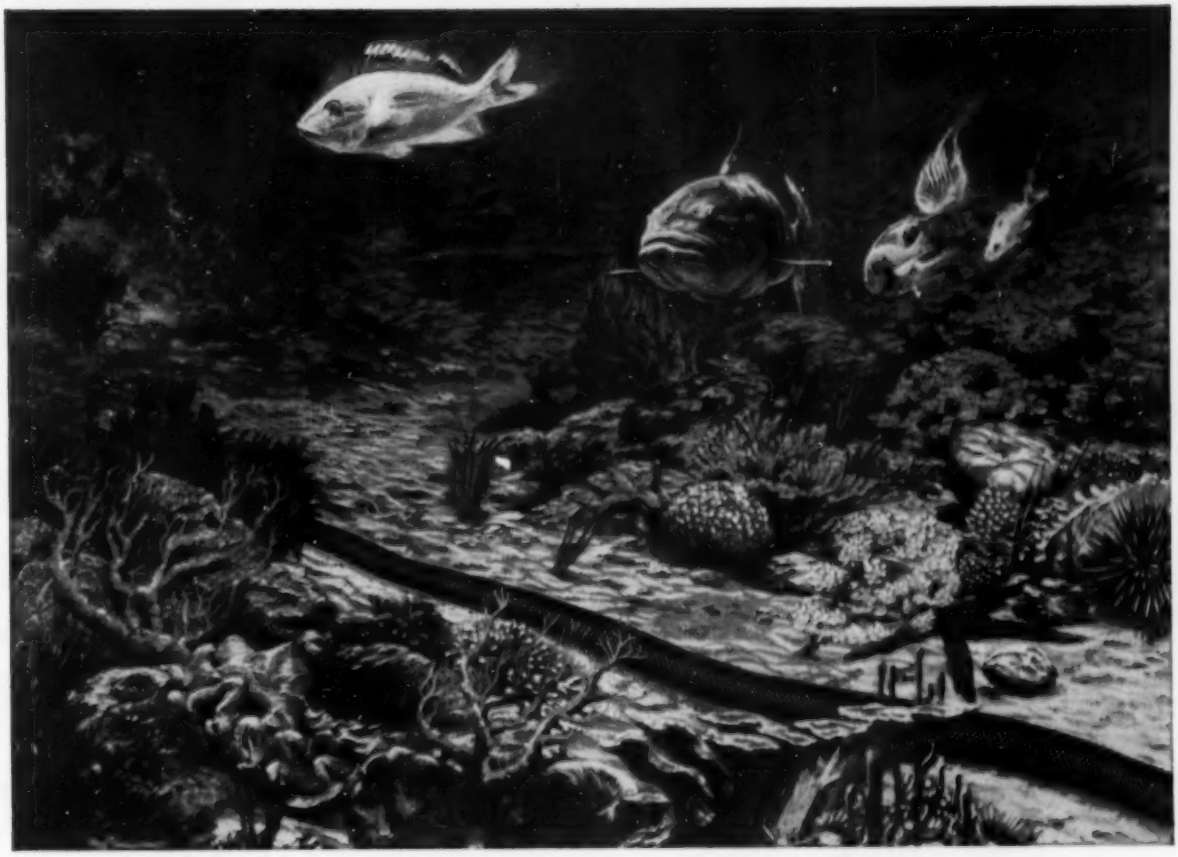
By 1945, he had had a lucrative business career—as president of Colonial Radio Corp. (now a subsidiary of Sylvania Electric Products, Inc.), Rustless Iron & Steel Co. (now part of Armco Steel), and finally Emerson Electric Mfg. Co. in St. Louis.

Emerson was a big World War II producer of aircraft gun mounts and fire control systems. Through the company, Symington met Harry Truman, who then headed a Senate investigation of war production.

• **Trouble-Shooter**—Truman named him to a succession of trouble-shooting jobs in government. First, as Assistant Secy. of War for Air, Symington presided over military unification in 1946. The next year, when an independent Air Force was organized, Symington became its first Secretary.

From then on, Symington's bureaucratic career was enmeshed in controversy. As Air Force Secy., he fought loudly against the Truman Administration's 1948-49 plan to cut back the Air Force from 70 to 48 combat groups and against the Navy over the relative merits of the B-36 and the super aircraft carriers.

Truman later transferred Symington into another hot spot—the scandal-rocked Reconstruction Finance Corp. Symington won bouquets for the way he ran the job. He resigned before RFC was legislated out of existence and threw his hat into the race for senator from Missouri.



# Private Line for a Guided Missile

This special cable on the ocean floor extends 1370 nautical miles from the Florida coast to Puerto Rico. The Air Force asked Western Electric to design, produce and supervise installation of a communications system for a guided missile test range extending out to sea. The cable is the backbone of this system.

It provides an instant, secret, weatherproof way of transmitting back to the test center in Florida a steady stream of data on missiles in flight. At certain island points along the way, radar installations spot the missile's position—flash it to Florida via the cable. Signals transmitted by the missile itself—about fuel consumption, skin temperature, internal temperature, flight attitude and the like—are picked up by radio receivers, and relayed instantaneously to Florida by the new cable.

Western Electric was asked to do this job because, basically, it was a problem in communications requiring the special experience we've developed in Bell telephone work as the manufacturing and supply unit of the Bell System. Also, we could (and did) draw extensively upon the combined skills of other Bell System units as well as our suppliers.

Route of the undersea cable for the Air Force's new guided missile testing range. It comes ashore at 23 points to have its current "boosted".

Western Electric

MANUFACTURING AND SUPPLY UNIT OF THE BELL SYSTEM

# In Business

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## Gold Hoards in Canada Due to Grow As Ottawa Lifts All Restrictions

Canada last week removed all restrictions on the sale of gold by Canadian mines to private persons, regardless of nationality. Export licenses are no longer required. But a mine that sells gold to the public—be it for hoarding or export—must forego Dominion subsidies, which totaled $11-million last year.

**The move stirred excited talk of a free gold market in North America,** but the real purpose apparently was to further the Liberal government's policy of scrapping unnecessary controls, and to get rid of subsidies. But most Canadian mines will hang on to their subsidies as long as possible by selling only to the government.

For the time being, Canada lacks the facilities to set up a gold market, but this may be done later. Meanwhile, there will be some growth of hoards, and some transfers from abroad, since Canada is obviously a safer place to store gold than Western Europe, North Africa, and the Middle East.

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## ICC Clears Way to Rail Hearings On 5% Boost in Passenger Fares

Prospects for a general 5% boost of passenger fares on Eastern and Western railroads grew sharper this week when the Interstate Commerce Commission gave the roads permission to file the new schedules about May 1. Technically, the new fares could go into effect 30 days later, unless ICC forbade them.

**Once the tariffs are filed, ICC will hold hearings on the matter. It is believed the commission will use the same speeded-up procedure as in granting the recent 6% increase in freight rates.**

ICC Chmn. Anthony Arpaia stressed that there was to be no connection between the rate hearings—which do not affect roads in the quadrant south of the Potomac and Ohio Rivers, and east of the Mississippi—and the commission's proposed general inquiry into deficits incurred by passenger service all over the country.

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## Suits and Sales Talk Put Action Into Cincinnati Paper's Civil War

The Cincinnati Enquirer's civil war (BW—Jan.28'56, p110) broke into the open again this week. At stake is control and perhaps eventual ownership of the newspaper.

**Board member and former Enquirer columnist James H. Ratliff leads the fresh battle of employee-stockholders against management.** But at midweek the fight became confused when (1) Scripps-Howard offered a rumored $13 a share for the Enquirer's $10 par common stock, and (2) Halsey, Stuart & Co. planned to sell some $1.5-million of convertible junior debentures, representing about 37% of outstanding shares.

Still, the battle does center on Ratliff. Late last week, three employee-stockholders backed by him brought suit in Federal District Court against the paper's five-man voting trust—publisher Roger H. Ferger, two of his nominees, and two employee-stockholders. The suit wants Ferger tossed out, saying he dominates the trust through "misrepresentation and broken promises."

Meanwhile, lest the debentures fall into "wrong hands," Ratliff sped to New York to urge Halsey, Stuart either to hold onto the debentures or sell them to an independent publisher.

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## Alcoa Makes It Unanimous, Boosting Aluminum Price 1½¢ a Lb.

The aluminum price rise seed that Alcan planted months ago (BW—Jan.7'56,p18) this week had sprouted to full maturity.

Kaiser Aluminum & Chemical Co. started the tag-along last week when it tacked 1½¢ a lb. on all grades of aluminum pig, ingot, billet and mill products. Reynolds Metals Co. and giant Aluminum Co. of America lifted surprised eyebrows.

Then Reynolds quickly boosted its own prices by 1½¢ a lb., blaming rising costs of expansion. By midweek, Alcoa had made it unanimous.

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## Business Briefs

**The National Automobile Show,** dead and gone from New York these 16 years, will come back next Dec. 8-16 in New York's spang-new Coliseum. Ford Motor Co., though not a member of the sponsoring Automotive Manufacturers Assn., is expected to participate.

Still the mating season. **Sunset Oil Co.** of Los Angeles and a San Antonio investment outfit, **International Mining Corp.** have agreed to marry, if stockholders consent. **National Tea Co.** is talking merger with **George Weston, Ltd.,** a bakery chain. Weston interests already control National Tea.

**Deliberate route delays** in lumber shipments by rail, designed to give extra time in transit to sell the lumber, have been hit by ICC. Citing an acute shortage of freight cars, the commission has barred all such tactics, and says it will hale violators into court.

**New orders for machine tools** fell off 25%, in February, to $86-million, says the National Machine Tool Builders Assn. No increase, and possibly a sagging, are seen ahead.

**Gulf Oil Co.** has moved into the Bolivian petroleum picture, signing a letter of intent with the government. When formal contracts are signed, Gulf will have the right to explore nearly 3.8-million acres, and to pick over 1.2-million acres for exploitation within four years. The price: an 11% royalty on oil produced, and a 19% exploitation tax.

# The Battle of the Century...

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are *outmoded machines* capable of putting people
out of business.

Today, the cost of down-time, overtime, and wasted
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*No other machine tool builder in the world can equal Jones & Lamson's experience in reducing costs with high-velocity metal turning and grinding equipment.*

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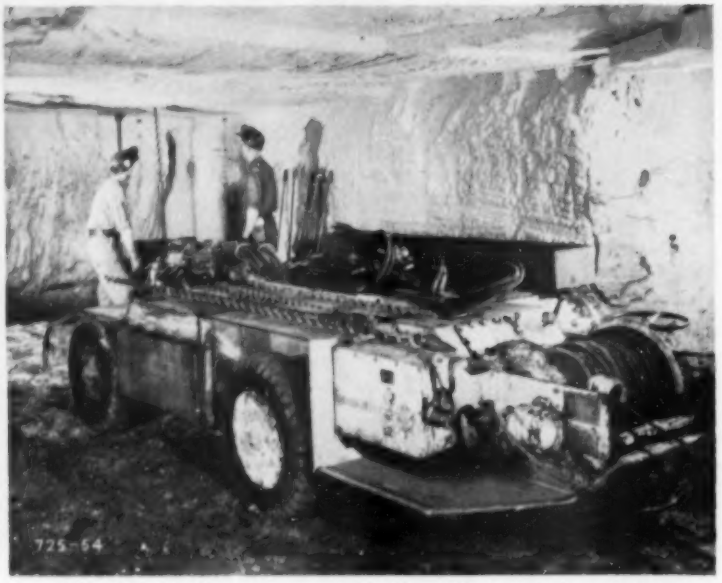
*Turret Lathes · Fay Automatic Lathes · Milling & Centering Machines · Thread & Form Grinders · Optical Comparators · Threading Dies & Chasers*

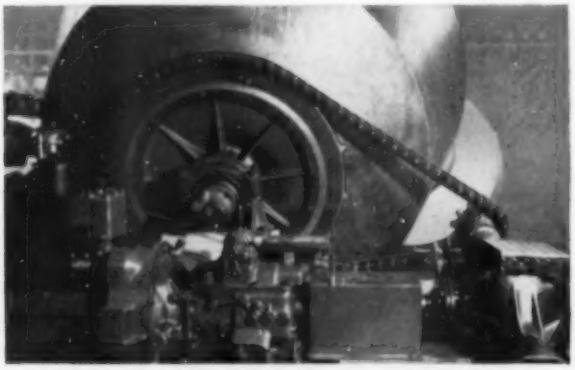
# What's new in MECHANIZATION?

**Puts Vibration to Work**—Hot castings, right from the molds, ride this JEFFREY vibrating conveyor, which shakes sand loose in transit. At the "end of the line", sand is shaken out through a grating, while castings move on to a cooling conveyor. Mechanized setups like this cut foundry costs, boost output and profits.




**Hanging a Roof.** Did you ever reach overhead to drill a hole in the ceiling? Backbreaking! But here's a machine that can put in a full day, every day, drilling holes in a mine roof and setting bolts to hold up the ceiling. In one shift, this JEFFREY Roof Drilling Machine drilled 138 holes 5-feet deep and set the bolts, then provided power for drilling 76 holes in the sidewalls for shooting down coal. JEFFREY mining machines have stamina!

**Factory in the Air!** Raw materials are carried skyward by these two JEFFREY bucket elevators. Then they're graded and ground as gravity draws them down again through the processing steps. Whether your materials-handling problems call for working against gravity or putting it to work for you, JEFFREY engineers and JEFFREY equipment are expert at solving them.



**Chain Drives for Autos** were fast going out of style a half century ago. But chain for power transmission on all kinds of industrial products is very much the vogue today, and its use is expanding. Here you see a typical example—JEFFREY chain driving a cement mixer through a JEFFREY STEELCARVE" sprocket. Our engineers will gladly help you determine where you will profit by applying chain to your drives.

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# WASHINGTON OUTLOOK

WASHINGTON
BUREAU
MAR. 31, 1956

**Some facts behind the farm bill politics:**

**The downtrend in farm income is still running.** The last year in which farmers got a parity price for their products was 1952. In 1953, the parity ratio index was down to 92%. Last year, it was 84%. In February this year, it was 81%. It's the one big soft spot in the Republican boast of prosperity with Eisenhower.

**The farm vote can swing close elections.** It tripped the GOP in 1948, when the issue was government assistance to maintain prices.

**A threat of a farm revolt** is being read into the Minnesota Stevenson-Kefauver primary. Kefauver made the biggest promises to farmers.

**Democratic strategy in Congress is this:**

**Give Eisenhower a farm bill that he will veto**—a bill that would restore price supports to 90% for this year. Then, pass Eisenhower's soil bank and land conservation program. This would do little, if anything, to check the slide in farm income in this election year.

**The effort will be to blame the GOP for low prices.** Here's what the Democratic bill offers producers of major commodities, in terms of price supports, against the Administration stand: wheat, $2.26 a bu. against $1.81; corn, $1.64 against $1.40; cotton, about 33¢ a lb. on the average against about 30¢. There would be more for other propped crops, too.

**Republicans are concerned.** They don't see a farm revolt that would upset Eisenhower's reelection prospects. But they are badly worried about House and Senate races in pivotal farm states of the Midwest.

**Eisenhower will be urged to sign the Democratic bill.** It will be argued that the return to 90% props is for one year only, and meanwhile the soil bank and other moves to take land out of production will start working. And, it will be emphasized, if Eisenhower takes the 90% bill, he will neutralize the farm issue in politics—kill off the one big factor on which the Democrats count. But failure to veto would rip the rug right out from under Agriculture Secy. Ezra Taft Benson and GOP House members and senators who have stood by the Administration on this hot issue.

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**Stevenson is under rising pressure to move left,** which means to abandon his "moderation" policy and wage a Truman-type campaign. He's reluctant. But many of his advisers think he will have to make the switch, or else see Kefauver win in California and blast his hopes for good.

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**As for Kefauver's own campaign,** he's hewing close to the New Deal in promises to voters and backing it up with personal contacts.

**He's strongly pro-labor.** He was against the Taft-Hartley Act and supports labor demands for its revision and even outright repeal.

**He's against bigness in business.** He co-authored Clayton Act amendments to regulate mergers and is active in anti-monopoly investigations.

**He's hot for public power,** as represented by TVA and the other big federal hydro developments.

**On the farm issue,** he is strong for 90% supports and talks generally about 100% as being the farmers' fair share in the national economy.

**On school desegregation, he's moderate.** He refused to sign the Southern manifesto—one of the few Southern states' holdouts.

WASHINGTON BUREAU
MAR. 31, 1956

**Betting against Kefauver remains strong,** despite his obvious appeal to voters. There is the resentment against him from the Democratic pros, who won't forgive him for the embarrassment caused the party by the crime investigations several years back.

**Harriman's chances** are rated better by the forecasters. That's on the figuring, of course, that Kefauver and Stevenson will kill each other off.

**Symington talk is heard more and more** (page 30). The Missouri senator has more pull in the South than Harriman. And with the party's White House hopes low, he might be picked just to avoid another North-South split.

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**More money for the Air Force is a pretty good bet**—more money than the budget asked for fiscal 1957, which starts July 1.

**It's largely political.** For one thing, Congress can boost airpower without raising at the same time the prospect that the draft will have to be stepped up to meet these extra defense needs. Whether Eisenhower will allow the extra money to be spent is another matter.

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**The election year business outlook, as Washington sees it,** keeping in mind the fact that the GOP is counting on good times:

**The January-March period will show a rise,** when measured in terms of gross national product—value of goods and services produced—but it will be small. In fact, it will be only slightly above 1955's last quarter. The gain will be some $200-million from the previous quarter's total of $397.3-billion. The yardstick used is the annual rate. The hope had been for a bigger rise. But it hasn't been realized. This doesn't mean trouble ahead at all. The worst it can be called is a side movement, at high levels.

**The second quarter will show a sharper climb,** according to forecasts. The expectation is that GNP will hit a $402-billion annual rate, or nearly $5-billion more than in the first quarter. That will mean a pickup in production, employment, wages, etc.

**As for the last half,** government people think business will hold level through the third quarter, then show new strength in the fourth. In terms of GNP, there is speculation about a fourth-quarter rate of $410-billion.

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**Behind the figuring** is the expectation of rising consumer buying power that will feed on continuing increases in wages. Wage hikes will be big this year, and the new $1-an-hour minimum wage will provide more buying power.

**There will be automatic wage raises**—raises called for this year in contracts negotiated last year. Bituminous coal is one. Next week, the daily rate will rise 80¢. Auto pay scales will push up this year, too (6¢ or more at Chrysler next week). As these scheduled wage increases come along, they will make it easier for unions in other industries to win increases.

**The steel wage rise won't hit the 30¢ an hour** demanded by the union. But Washington guesses it will be close to half that amount. The union negotiators are relying heavily on the outlook for a high business level this year. And anytime the big unions win big raises from the big companies, the smaller unions and employers also settle at relatively high rates.



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*Photograph by Wellington*

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One of the proudest achievements of modern medical science is its progress in preventing and treating the diseases of infants and children.

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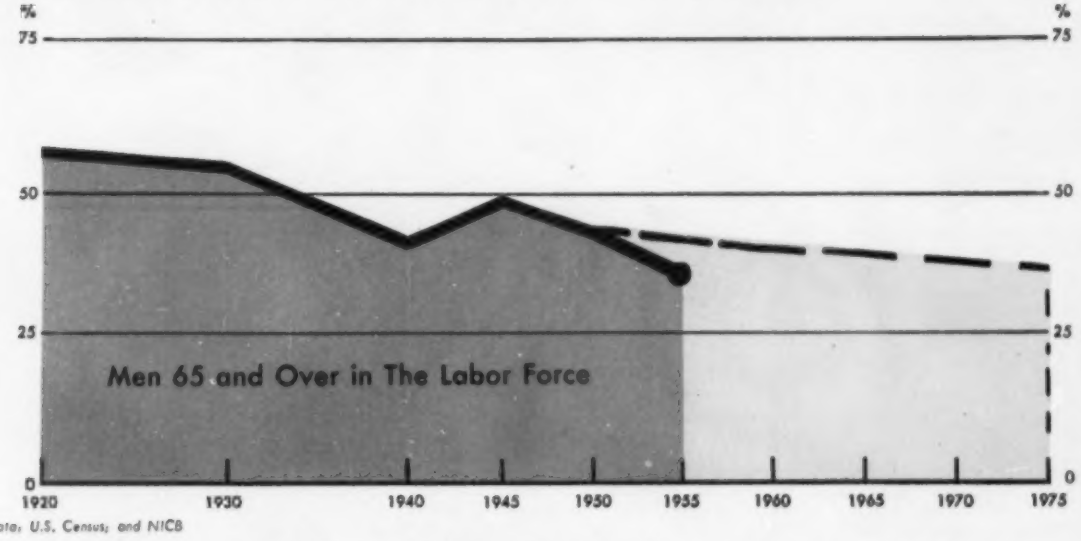
## Older Men Are Retiring Faster Than Expected...




Data: U.S. Census; and NICB

## ...But Surveys Indicate They Are in for an Economic Shock...

√ . . . 55% of them expect no drop in living standards.

√ . . . Only 38% make financial plans for retirement.

√ . . . Most of them will experience at least a 50% cut in income on retirement.

# Pensions Fall Short of Goals

When the tide of pension plans began sweeping through industry, most companies figured it was simply a matter of providing the money and working out a program. Many overlooked a couple of pertinent factors:

• Older workers are dropping out faster than the Census Bureau experts predicted as late as 1950 (chart, dotted line). What's more, the population students say that from now on our aging work force—24-million of our 65-million are over 46 years old now—will be pushed off the pay rolls at an even faster rate.

• Many of these employees aren't prepared either financially or psychologically for retirement, and are apprehensive about what retirement will bring. A surprising number resist retirement, and those who are unhappy in retirement communicate their woes to cronies still on the job.

As a result, many of these older employees look to their company for help, and pressure for better benefits is building up. These problems are likely to spread, since our aging work force will push an increasing number of men into retirement over the next 10 years.

Some companies, such as Esso Standard (BW—Apr.14'51,p32) have pioneered ways to cushion the jolt from active work to a life of ease, but for others, there is growing concern over how to meet these problems.

• **Surveys Show**—What to do has been the basis of several recent surveys. The question also is responsible for the creation of organizations such as Retirement Council, Inc., which advises on pension policy and provides attitude surveys.

Millard C. Faught, president of Retirement Council, found ammunition for his new agency in an Opinion Research, Inc., survey that was under way about the time he was launching his service. This survey found that:

• Forty percent of workers near retirement fear it for financial reasons. Also, they don't like the idea of getting old, having too much time on their hands, and feeling nonproductive. So they try to put off the evil day.

• Few make personal financial preparations for retirement. They think they should get company help in this field. But thus far, 86% get no company help, and just as significantly, 85% get no union help.

• Most are in for a financial shock. They are aware that their income—averaging $4,000-plus a year—will drop by at least one-half on retirement. Even so, they optimistically hope that their standard of living won't change. This just doesn't jibe with the facts of retirement income.

• The majority look on pensions as their due. They believe that their company is responsible for providing enough in pensions so that—combined with Old Age Security Insurance—they will be able to "get along."

• **Investment**—Faught puts some of the blame on the way company pension plans are handled. Pensions are a multi-billion-dollar investment, he says. Yet many companies haven't followed through with a program to guarantee that they get something in return for the money they lay out. In some cases, it has even proved to be a bad investment.

He cites instances where pension plans actually have created ill will among employees—usually because the pensions were so small it was a mistake to start them, or because employees just didn't understand how they worked. If this pension money represented capital investment, Faught says, you can bet

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## *". . . finances are the chief worry; psychological factors run a poor second . . ."*

**STORY starts on p. 43**

management would have its eye out for results.

• **Tie-In**—The survey on which Faught bases his findings ties in with a recent study made by Life Extension Foundation on how retired employees are making out. Life Extension quizzed 1,500 of them, and found that:

• Finances are the chief worry; few have part-time jobs.

• The amount of retirement income tends to correlate with adjustment to retirement. The bulk of retirees who wished they were back on the job were from the lower end of retirement income scale ($2,000 per year or less).

• There are some adjustments involved in getting settled and finding useful pursuits.

• Most companies haven't been able to provide any real help in personal adjustment. The percentage of those who had received preretirement training and who reported that their retirement routine was interesting was almost the same as those who had had no training.

• Although 460 wished they were back on the job, only a handful were really bitter toward their company for having been retired.

• **Crux**—From these results—and the implications of the Opinion Research study—Dr. H. J. Johnson, head of Life Extension, feels that the crux of the retirement problem is financial, with psychological factors a poor second. He says, "Give a man enough money and many of the so-called psychological problems take care of themselves."

If this is the case, management can be expected to face substantial pressure from both workers and unions to increase pension benefits. This is especially true if pension trust funds continue to grow. Thus far, their heavy investment in common stocks is giving a better return than anticipated (BW—Apr.2'55,p77). As a result, both workers and the unions are beginning to seek a bigger cut.

• **More Benefits**—One way companies have found to sweeten the financial side is by adding fringe benefits onto their pension plans. Consolidated Edison of New York, for example, has a death benefit so that if a man dies his wife is not left penniless. Esso Standard permits men to retire earlier than 65—at only slightly less pension—and some companies are expanding their programs to include medical and hospitalization benefits for retired personnel. The last point is especially important, says Dr. Johnson. He finds that fear of sickness is a big worry. Most retired employees have enough money for normal expenses, but no reserves to draw on.

• **Deeper Problem**—Robert Redpath, pension consultant, feels there is a definite trend among companies to sweeten pensions with extra benefits to their present programs. But some experts feel that even though ex-employees do get financial assurance, management still has some psychological problems to hurdle.

One problem stems from the fact that management often is wary about intruding too far in an employee's private life. This fact shows up in a recent study by the National Industrial Conference Board. But even here, there are signs that companies are acquiring a diplomatic touch. Where 13% of 355 surveyed companies had pre-retirement programs in 1951, 65% of 327 companies had them in the latest survey.

• **Formula**—Even so, there are few full-blown retirement preparation programs. They run the gamut from the bare essentials of telling an employee what his pension will be to helping him plan his retirement 10 years before it takes place. Only 34 out of NICB's 327 companies sampled have a formal program, and even here it varies from those that start one to four months before retirement to a few that start at the 10-year point.

The consensus of the surveys is that:

• You should start at least one or two years before retirement, and work back as far as 10 years. Bell & Howell Co. is working toward age 50 as the ideal starting point.

• Programs should be centered around financial planning, and draw a realistic picture of retirement income. Some companies even advise on investments, taxes, and ways to supplement income.

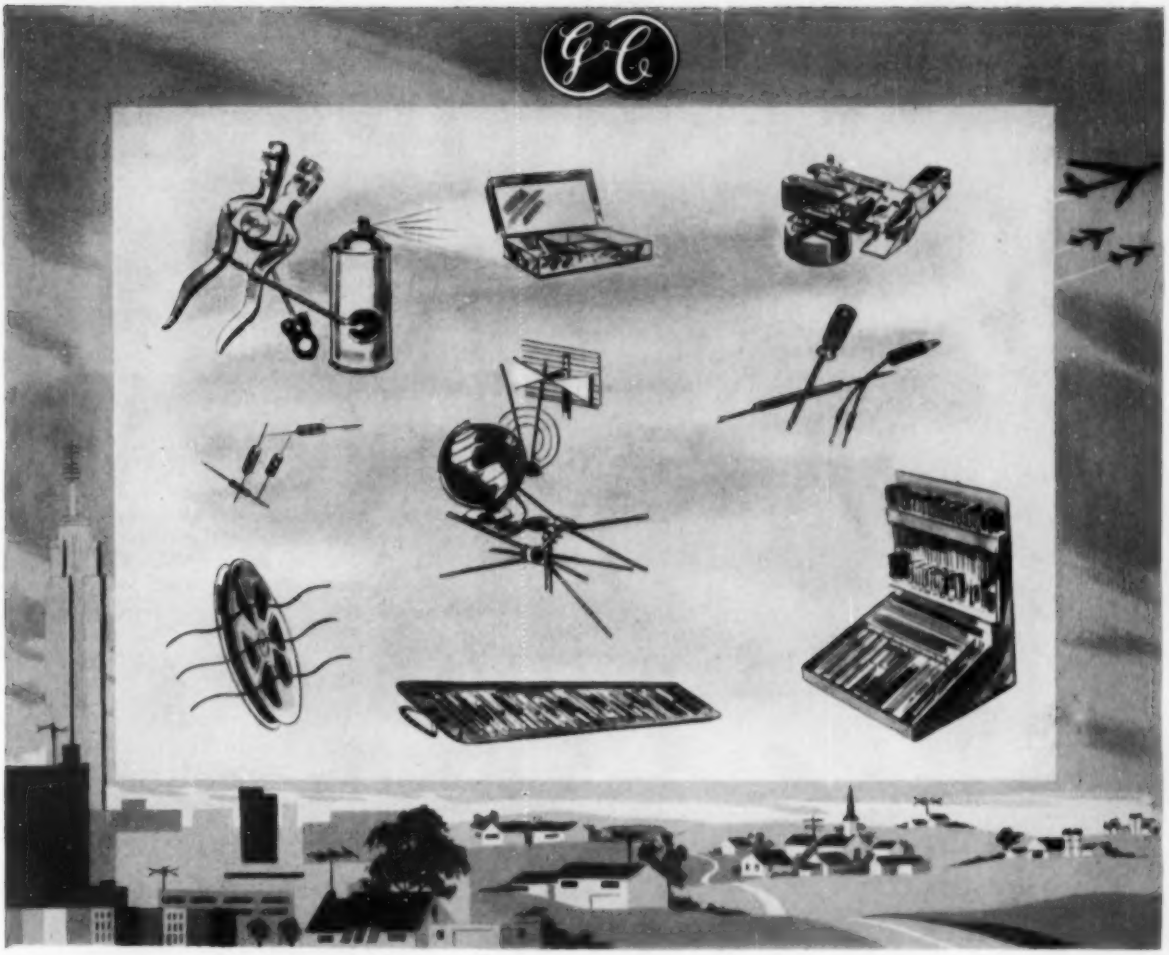
• Participation in training programs should be voluntary, and should include both individual and group discussion.

• Wives should be invited.

• Leisure and enjoyment of life should be stressed. Health problems can be tackled, too. Some companies offer free physical examinations before and after retirement.

• You shouldn't tag discussion attendants as "old folks." Older people resent this.

Companies who conduct these programs say they do so because (1) they feel responsible for helping an employee cope with his adjustment to retirement:




## General Cement joins the TEXTRON Family of Business Enterprises

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***". . . companies try to help but sometimes overemphasize problems . . ."***

**STORY starts on p. 43**

(2) they think it minimizes resistance to retiring; (3) it sustains older workers' productivity; and (4) it builds up good will.

Of course, formal counseling isn't the only way to sell a pension program and aid older employees. Financial planning has to start much sooner than one or even 10 years before retirement, and so many companies push for employee participation in company savings or stock option plans.

• **Tapering-Off**—But even when an employee is sold on his company's pension plan, there's still the problem of easing him into his new life. The surveys indicate that employees don't like the idea of tapering off work before retirement. Some 80% of them say they would rather work full time at full pay up to the last day, and then knock off. However, some companies do use a tapering off program with reported success.

American Sterilizer Co., for example, gives its retiring employees a month off the job, then a month on, in order to acclimate them gradually. Combined with Social Security payments this system permits retirees to get 85% of pay for 50% of normal work, and to test out retirement gradually. Not only did this help retirees, says the company, but it allayed fears in those still awaiting retirement. Now, says the company, many men ask to retire directly and don't bother with the one month on, one month off plan.

Other companies have also instituted the use of longer and longer vacations before an employee retires. At Mutual Benefit Life Insurance Co., Newark, N. J., employees are given 10 weeks vacation time during their last year of employment, to plan their post-retirement affairs.

Harold R. Hall, retirement consultant, thinks that part-time work for retirees is a practicable though largely unexplored resource. It could prove valuable to the company, and would be a welcome source of income to the pensioner. This would be particularly good in the first year or so, when the adjustment problem is greatest.

Dr. Johnson of Life Extension Foundation agrees with Hall, and thinks that proper counseling can be a big help. But in some cases, Johnson says, companies overemphasize the problems of retirement, and that has created as many fears as training programs set out to eliminate. **END**

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# Technical

COMPANY recruiters on the prowl for engineers and engineers in the market for jobs with higher price tags had a field day all last week in New York. With the Institute of Radio Engineers and the 1956 Career and Job Show convening at the same time, the two groups had a golden opportunity to shop around, talk with one another and strike bargains (pictures).

National conventions of IRE may not have been designed as recruiting carnivals, but like the meetings of some other technical groups, that's what they have become. The career show, of course, was specially designed to (1) give college and high school students some idea of the career possibilities in engineering, and (2) permit company recruiters to sign up college students and graduates who attended the show.

• **Intensive Recruits**—But the most serious recruiting went on at the IRE show where some 40,000 engineers were in attendance. With engineering talent short—especially in electronics—reading of technical papers and display of company products, the original functions of IRE meetings, took a back seat. They served as a backdrop—and an excuse—for some of the most intense proselytizing of electronics engineers that has ever gone on.

It's too early to tell just how effective last week's recruiting drive was. But

**LURED** to a hotel room, prospect talks jobs with a Lockheed recruiter during Radio Engineers convention.

**GADGETS** draw visitors to North American suite where they're exposed to a company sales talk.

**JOB SEEKER** filling out interview form for Lockheed gets cup of coffee from hostess as companies go all-out to welcome—and hire—engineers.

# Convention Becomes a Job Mart

CAREER AND JOB SHOW gave company representatives a chance to talk to hordes of students about employment.

you can get some idea from the results of last year's show. At that time, one large West Coast manufacturer interviewed 285 men, made offers to 89 of them, and hired 65. This is a pretty good showing. "We offered interesting jobs—and interesting salaries," a personnel man explained. This same company turned up again at this year's show.

West Coast companies report it now costs over $2,000 to recruit one engineer, so the concentration of talent at the IRE show was especially attractive to them. It gave them a chance to come in contact with 40,000 electronics specialists, who, along with physicists, have the most sought after talent in the country.

• **No Holds Barred**—But not all the companies sending recruiters to technical shows come out ahead. The story is being told that one company sent 35 recruiters to last year's IRE show—and lost 20 of them to other companies.

K. T. Zint, employment manager of Lockheed's missile division, reports "I've been solicited here myself." He headed a 22-man recruiting team brought to New York for the show and believes such junkets pay off. "Last year we hired a man that I'd been talking to at this show for five years," says Zint. And getting that one man paid the costs of his own trip to New York for five years, he says. This year, recruiters from California companies got a break from the weather man, Zint believes. Their pitch sounded good at a time when the whole northeast was digging out from the season's worst snow storm.

• **Salaries**—The recruiters are having to dangle higher salaries under the noses of the engineering prospects they hope to hire. The offering price for recent graduates is about $450 a month. But University of Tennessee reports two of its enterprising young electrical engineers left the cloistered halls at a neat $7,800 a year. An engineer leaving college in possession of a doctor's degree can find $10,000 to $12,000 jobs without too much trouble. And if he has four or five years of experience, he can almost write his own ticket, the recruiters say.

At this year's IRE show there were 714 company exhibits at the Kingsbridge Armory in The Bronx. The technical papers were presented at two Manhattan hotels. And 82 companies set up "hospitality suites" at the Waldorf-Astoria.

Of course, not all of the engineers who showed up at the "hospitality suites" were in the market for jobs. One recruiter estimates that only about

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*Progress Is Our Most Important Product*

GENERAL ELECTRIC

PLANT LOCATION was one of things engineers in market for new jobs wanted to know about.

25% of them were, with the rest just looking around and keeping in touch with the market.

• **How It Works**—The recruiting system worked this way: Through invitations issued at the company's exhibit or through newspaper ads, engineers were told they could come in for private exploratory talks. Those who turned up at a company's hotel suite were met at the door by personnel recruiters and introduced to men in the company (usually division or department heads) who specialized in the same field. The visitor and company man would trade information on background and experience, salary, and the opportunities the company had to offer an engineer. Then the meeting would break up—usually with a promise from the company executive to "get in touch later."

This process went on all week, with company men interviewing an endless stream of "guests," and "visitors" talking about job opportunities with a number of host companies.

While this system of recruiting may be satisfactory from a company's point of view, it is not completely to the liking of department and division-level scientists. Though these men feel the pinch of the engineering shortage most sharply, a good many of them felt rather embarrassed and self-conscious at finding themselves mixed up in the recruiting process. They apparently had mixed emotions about the process of shilling for a company.

# In Management

• • •

## Wedding Bells Pealing Again in Electronics; Friden Seeks to Buy Commercial Controls Corp.

Another merger in the fast-moving electronic data processing industry was announced last week.

Friden Calculating Machine Co., San Leandro, Calif., plans to acquire Commercial Controls Corp., Rochester, N. Y., maker of the Flexowriter, an electronic typewriter with a built-in system for simultaneously making punched tapes.

Friden's acquisition follows a move by Burroughs Corp. to pick up ElectroData Corp., of Pasadena, giving Burroughs a medium-sized computer, the Datatron (BW—Mar.24'55,p36).

Friden is issuing 226,780 shares of its stock to Commercial Control holders on the basis of one and a half shares of Friden for each share of Commercial Controls. Equity Corp., New York investment company, owns more than 50% of the latter's common.

• • •

## Montgomery Ward Management Names Directors To Replace Departed Wolfson and Associates

The dust from the Wolfson-Avery battle at Montgomery Ward & Co. will apparently be completely settled at this year's annual meeting.

Ward management has nominated three replacements for the directors that Louis E. Wolfson was able to place on the board last year after his proxy battle with Sewell Avery. They are H. P. Davison, president of J. P. Morgan & Co.; W. A. Patterson, president of United Air Lines; and Joseph C. Kracht, vice-president in charge of Ward's retail stores.

Wolfson, his lieutenant, Alexander Rittmaster, and Bernice Fitz-Gibbon, another Wolfson director, have all resigned. Davison returns to Ward's board for the third time. The last time he quit it was because of a policy dispute with Avery, who was then chairman, but is now only a director of the company.

• • •

## Management Briefs

**Still on a buying spree,** ACF-Wrigley Stores, Inc., one-time bus maker turned grocer, last week took over Fred P. Rapp, Inc., privately owned chain of 10 St. Louis supermarkets (annual sales: $25-million). Since ACF-Wrigley quit the bus business late in 1955, it has picked up about 150 supermarkets, has annual sales of $340-million.

**Jerrold Electronics Corp.,** Philadelphia maker of TV antenna equipment, closed-circuit TV systems, and antenna systems for towns in poor reception areas, is buying out operators of master TV antenna systems for weak signal areas. Last week, Jerrold (annual sales: $3.7-million) added the systems in Flagstaff, Ariz., Dubuque, and Pocatello, Idaho to a pair bought earlier.

**Hamilton Watch Co.,** Lancaster, Pa., is plunging into auto supply. Hamilton hopes to have an auto clock "that really works" ready for the 1957 models.

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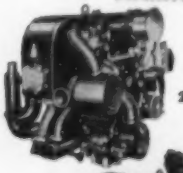
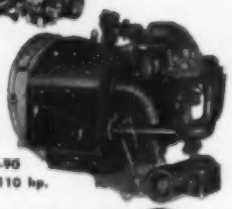
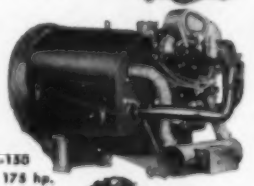


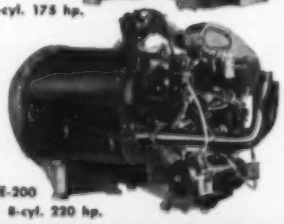
PC-30
2-cyl. 34 hp.



PE-90
4-cyl. 110 hp.



PE-135
6-cyl. 175 hp.



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# Rail Trio

Everybody knows that the railroad business ain't what she used to be; rail stocks, notably the eastern lines, have lost some of their oldtime investment glamor. Everybody knows, too, that there has been a lot more famine than feast in the always dizzy cycle of the coal industry.

So, take a look at the handsome paradox in the tabulation on the facing page, which tells the fiscal story of the so-called Pocahontas roads. The three Pocahontases are railroads, they're eastern, and they are based primarily on coal. Also, they enjoy high investment ratings. Here's the high-ranking trio:

**The Norfolk & Western Ry.,** which is controlled by the giant Pennsylvania RR.—a parent that bears the next-to-the-lowest stock rating bestowed by Standard & Poor's investment service.

**The Chesapeake & Ohio Ry.,** which was the baby of Robert R. Young until his roving fancy was drawn to the New York Central—whose shares bear the same low S&P's rating as the Pennsylvania.

**The Virginian Ry.,** controlled by the Mellon-Koppers interests.

Now take a look at how Standard & Poor's Corp. rates 47 rail common stocks actively traded on the Big Board, "measured by earnings and dividend stability and growth."

- Exactly three out of the 47 commons receive the top rating of "excellent."
- Only seven more edge into the next-highest category—"good."
- Only nine more rate the third-best listing—"above average."

In detail, you find a notably bleak status for the easterners, the roads that run westward from the Atlantic seaboard. In the old times, many of these lines were rocks of fiscal strength; indeed many of the East-West trunk lines still look large in the national traffic picture. But exactly three of them stand in S&P's top categories. Which three? the Pocahontases.

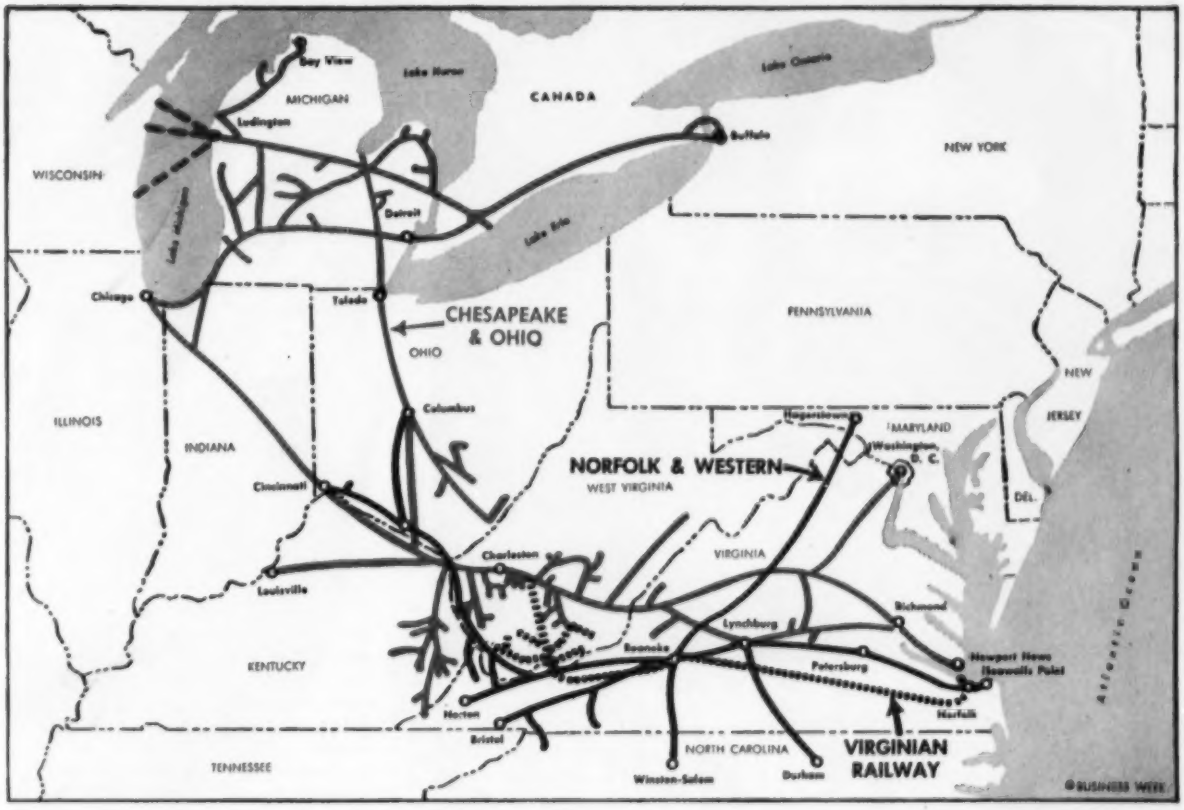
In the highest "excellent" grouping is the Norfolk & Western, in remote splendor with those two rich transcontinentals, the Atchison, Topeka & Santa Fe and the Union Pacific. Down a mere two notches, among the "above averages" are Chessie and its neighbor, the Virginian.

• **Operations**—Stoking these bright fiscal fires, in each case, has been that temperamental product, coal. And coal, for all its zigzag ups and downs, has never kept the Pocahontases from maintaining above-average operating performances, through all the depressions, recessions, and booms since 1929.

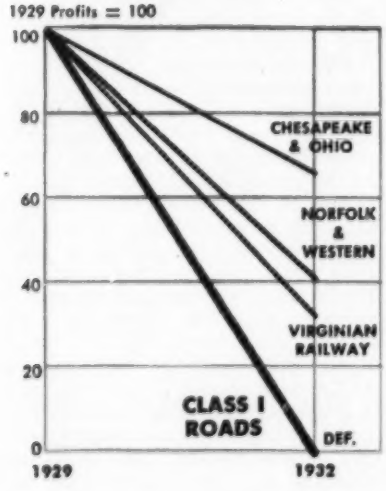
The story is the same if you dig back

# Scores a Paradox of Prosperity

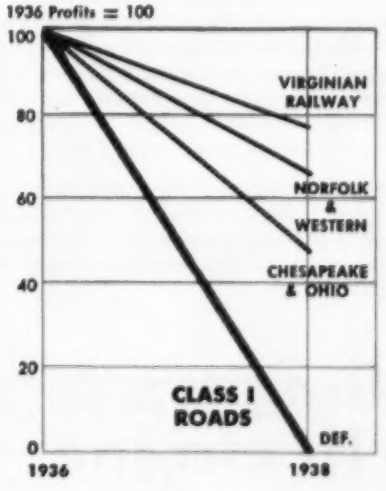
## The POCAHONTAS ROADS: Blue Ribbon COALERS Which Have Always Been Among the Leaders . . .



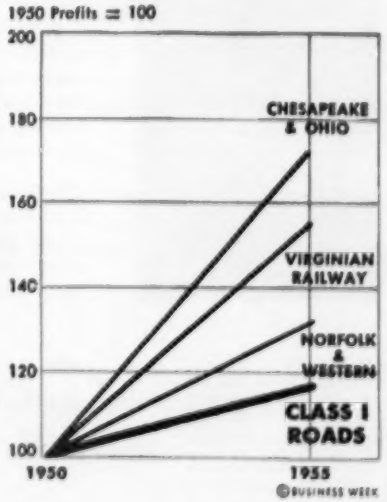

### . . . In Depressions . . .




### . . . In Recessions . . .




### . . . And in Booms



# What's going on at Calumet & Hecla?

From the classification rack, these logs race up an endless conveyor directly into the sawmill of our Goodman Lumber affiliate. In a matter of minutes, these logs will emerge as finished graded lumber in assorted shapes and sizes in the classification shed ready for the drying kiln. Every step is designed to move and process material quickly and efficiently, at no loss in quality.

A far different process is shown at the left. This is a section of a gigantic leaching tank in our Calumet Division, charged with scrap, high in copper content. Under closely controlled conditions, ammonia leaches out copper in the form of various chemical compounds. These are then dried, bagged and shipped for agricultural use.

Such processes are typical of an alert attitude in all divisions of Calumet & Hecla. They reflect a determination to improve methods, to utilize completely all basic materials. Calumet & Hecla, Inc., Chicago 3, Illinois.

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further into history. Neither Chessie nor N&W has had a single unprofitable year in this century. The Virginian, in its shorter life, has likewise needed no red ink.

In dividend paying, the three have an equally impressive record. N&W has never passed up its stockholders since 1901. Chessie has missed only twice, in 1915 and 1921. The Virginian has paid in every year except 1933 and 1934.

• **Efficiency**—This faithful payout has not been at the expense of maintenance. And because of continued good maintenance, the Pocahontas group can brag of very high level operating efficiency.

The trio had other fiscal facets for their pointing with pride. For a long time both the Virginian and the N&W have held cash and securities far in excess of their current liabilities. At the end of last year, Chessie was in virtually the same position—an especially enviable one for railroads.

• **Mounting Debt**—Since the war, the Virginian and Chessie have, like many roads, assumed a mounting burden of mortgage debt and equipment obligations in order to step up operating efficiency. But the load, though heavy, has been much lighter than for many lower-rated carriers; and fixed costs have been consistently and generously covered.

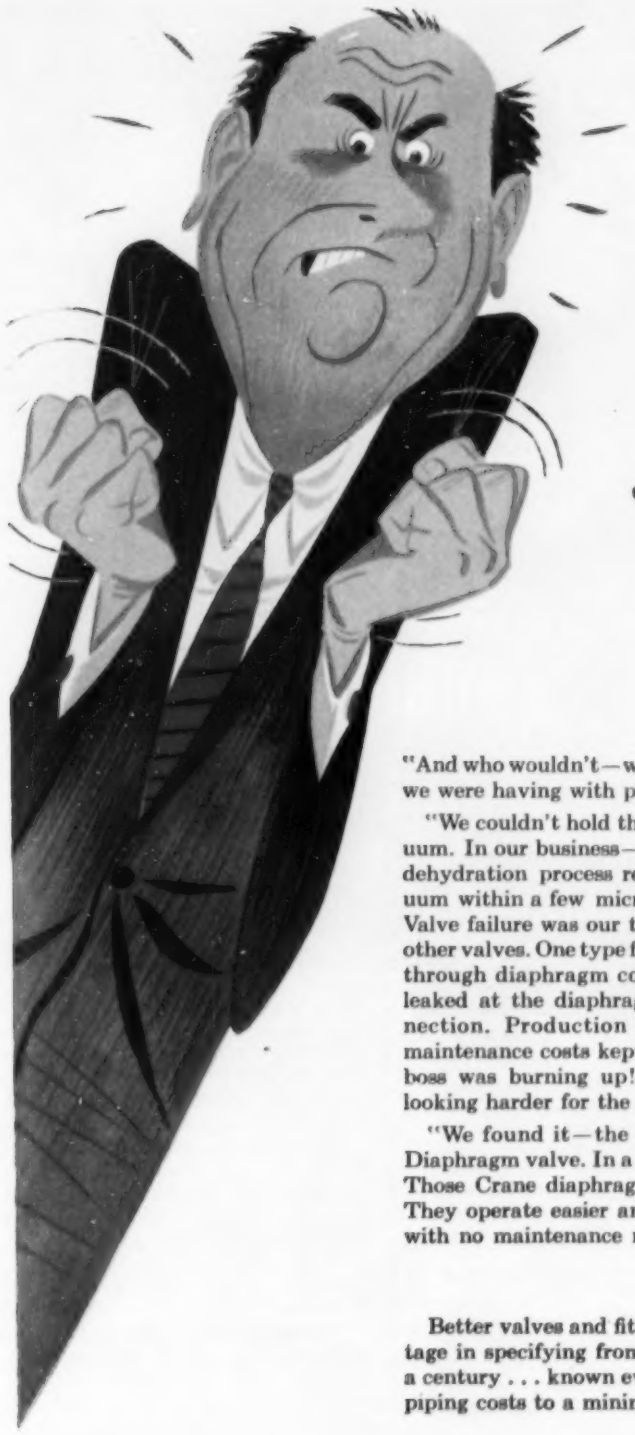
Still, it's the Norfolk & Western that is the prize exhibit for coping with funded debt. Since 1925, the road has reduced its outstandings by three quarters; all that remains are issues that can't be called. Even these, which don't fall due until 1989 and 1996, are already matched by a voluntary sinking fund which—plus income from the fund—should be able to handle the maturities without any further dipping into the till.

• **Coal, on Balance**—As for the dominance of coal-hauling in the business of the Pocahontases, it has both pluses and minuses.

On the minus side, the hauling of soft coal brings one of the lowest rates in the business. And it's mostly one-way traffic, since coal cars nearly always must make the return trip empty.

The pluses of coal, though, can be potent. It can be very profitable traffic when it moves for great distances in the volume represented by solid train loads. For the Pocahontas lines, the distances are long and the size of the trains is limited only by the power of the locomotives. For the C&O, typical drags have 160 cars, carrying 11,200 tons of coal.

• **Points in Common**—The roads all maintain important coal shipping facilities in the Norfolk-Hampton Roads tidewater area. Between the coast and the coal fields they have major interchange points with the north-south

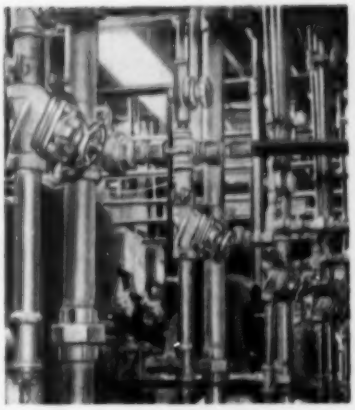


*Based on a case history in Crane's files*

# "the boss was BURNING"

"And who wouldn't—with the problems we were having with piping!

"We couldn't hold the necessary vacuum. In our business—refrigerators—a dehydration process requires line vacuum within a few microns of absolute. Valve failure was our trouble. We tried other valves. One type failed in 3 months through diaphragm collapse. Another leaked at the diaphragm-to-stem connection. Production losses and high maintenance costs kept mounting. The boss was burning up! And we began looking harder for the right valve.



"We found it—the Crane Packless Diaphragm valve. In a word, it worked. Those Crane diaphragm valves have positive bonnet sealing and seating. They operate easier and their diaphragm lasts longer. For 2 years now—with no maintenance needed—they've stayed tight in our vacuum lines."

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# YALE & TOWNE

## 87th Annual Report

**HIGHLIGHTS OF REPORT TO STOCKHOLDERS**

| | 1955 | 1954 |
|---|---|---|
| SALES and other receipts | $105,978,076 | $88,982,724 |
| Costs and expenses | 96,028,239 | 85,243,407 |
| Gross income | 9,949,837 | 3,739,317 |
| Taxes on income | 5,270,000 | 1,912,506 |
| NET INCOME FOR YEAR | 4,679,837 | 1,826,811 |
| Nonrecurring credit | 1,570,334 | — |
| NET INCOME AND CREDIT | $ 6,250,171 | $ 1,826,811 |
| NET INCOME PER SHARE (Not including nonrecurring credit) | $ 6.25 | $ 2.89 |
| Shares outstanding at Dec. 31 | 749,267 | 631,536 |
| Cash dividends declared | $ 1,835,922 | $ 1,258,822 |
| Income reinvested in business | 2,843,915 | 567,989 |
| Payroll and employee-benefits | 36,936,294 | 34,586,185 |
| Stockholders' equity | $ 52,274,998 | $43,234,675 |

**MANUFACTURER OF:**
**Industrial Lift Trucks and Hoists**
**Locks, Door Closers, Pumps and other Hardware Products**
**Powdered Metal Products**

**CASH DIVIDENDS paid in every year since 1899.**
Next quarterly dividend, 75¢ a share, payable April 2 on stock of record March 15.

THE **YALE & TOWNE** MANUFACTURING COMPANY
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trunk lines. In the mine fields themselves, the roads have invaluable webs of branches that gather coal.

• . . . **And Differences**—As you move westward, the physical similarities disappear (map, page 53).

The Virginian has its westward terminus at Deepwater, W. Va., where it connects with the New York Central. Indeed, the quantity of coal traffic turned over there by the Virginian plays quite a part in making the Central the second-largest coal-terminating system. Yet a great deal of the Virginian's coal moves to tidewater whence it moves by ship both abroad and to New England, where the Koppers Co. has heavy interests.

The seaboard also gets a large part of the coal originated by the N&W and the Chessie, which is the top coal originator. Last year, the C&O accounted for 14.8-million tons of the 34-million tons total exported by the U.S. Both roads also move huge quantities of coal westward, to connections for off-line delivery and, especially in the case of Chessie, for direct delivery to major coal-consuming areas.

• **The Woes of Coal**—For the soft coal trade as a whole, various ills have been gnawing ever since World War I. Among them are:

• Loss of business to competing fuels.

• Serious and recurrent labor troubles.

• Improved boiler efficiency, which cuts coal use.

Up to now, the impact of these factors has varied in the different major areas producing soft coal. It has been notably light in the Pocahontas field of West Virginia and Eastern Kentucky, which is served almost exclusively by Chessie, the N&W, and the Virginian. Since the early 1920s, this area has been supplying a growing share of the nation's declining soft coal output.

The Pocahontas field has been helped by a below-average share of labor troubles, which has permitted prompt deliveries and has helped keep costs down. Another helping factor is the high quality of the field's coal, which has made it especially popular in utility plants and in industry generally.

• **Cheerful**—Whether the next 50 years will be as profitable for the Pocahontas trio as the past 50 is a moot point, and one that Chessie can afford to worry about less than the other two. That's because the C&O merger with the Pere Marquette a few years ago has made it less exclusively dependent on coal. Besides, Chessie takes a bright view of the future of coal. Says the road, "The turning point in coal's fortunes has been passed and coal's growth will go firmly forward to new highs." The sentiment seems to be shared by the N&W and the Virginian. END

*Photo courtesy Chanin Building, New York, N. Y.*

A LITTLE over a year ago, a large New York office building began installing air conditioning. And PLIOTRON Air Cleaners are being specified for the new units rather than the oil-impregnated type used in the previous ventilating system.

Cleaning and oiling of each of the old filters took hours, requiring a large inventory of reserve filters to keep the units operating. Now, with PLIOTRON, *no reserve filters* are needed because PLIOTRON washes clean in a matter of minutes and requires no oiling. The result is a considerable saving in maintenance cost and the recovery of valuable storage space previously used for extra filters.

PLIOTRON is the world's first truly washable panel type electrostatic air cleaner. PLIOTRON washes clean so much easier than ordinary filters that this one feature alone means substantial savings. But, PLIOTRON does much more.

## PLIOTRON DOES A BETTER JOB LONGER:

It removes up to five times as many fine dirt particles as ordinary filters. It is depth-loading rather than surface-loading—the entire depth filters the air for longer, more efficient service between cleanings. And, it lasts indefinitely. When dirty, a simple washing restores PLIOTRON to full efficiency.

PLIOTRON is available in standard panels to fit any air distribution system using ordinary filters. It is also available in new half-inch-thick panels for use in window air conditioners, and a new heavy duty construction for extreme service conditions. For details on how you can get cleaner air at less cost, see your PLIOTRON distributor or write: Goodyear, P.O. Box 268, Akron, Ohio.

Pliotron—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

**PLIOTRON Air Cleaner** by **GOODYEAR**

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**HEAR** how the five "M's" of good factory planning can boost efficiency while cutting costs.

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**HEAR** and see how production, shipping, storage, employee facilities and offices are all integrated for efficiency and economy.

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## 1955's Biggest Non-Financial Money-Makers

| COMPANY | 1955 Net Profits (Thousands of Dollars) | 1955 Rank | 1954 Net Profits (Thousands of Dollars) | 1954 Rank | Gain 1955 vs. 1954 |
|---|---|---|---|---|---|
| General Motors Corp. | $1,189,477 | 1 | $805,974 | 1 | +47.6% |
| Standard Oil (N.J.) | E 717,000 | 2 | 584,793 | 2 | +22.6 |
| The Bell System | 664,243 | 3 | 549,931 | 3 | +20.8 |
| Ford Motor | E 437,000 | 4 | 227,800 | 5 | +91.8 |
| E. I. du Pont de Nemours | 431,556 | 5 | 344,386 | 4 | +25.3 |
| United States Steel | 370,198 | 6 | 195,418 | 9 | +89.4 |
| Texas Co. | 262,730 | 7 | 226,141 | 6 | +16.2 |
| Standard Oil (Cal.) | 231,139 | 8 | 211,872 | 7 | + 9.0 |
| Gulf Oil | 218,064 | 9 | 182,813 | 11 | +17.6 |
| Socony Mobil Oil | 207,434 | 10 | 183,806 | 10 | + 8.8 |
| General Electric | 200,924 | 11 | 198,913 | 8 | + 1.0 |
| Bethlehem Steel | 180,192 | 12 | 132,837 | 13 | +35.7 |
| Sears, Roebuck & Co. | 164,000 | 13 | 141,343 | 12 | +16.0 |
| Standard Oil, (Ind.) | * 147,885 | 14 | 117,157 | 15 | +26.2 |
| Union Carbide & Carbon | 140,756 | 15 | 89,779 | 16 | +56.8 |
| Kennecott Copper | 125,615 | 16 | 77,906 | 18 | +61.2 |
| Shell Oil | * 119,417 | 17 | 121,127 | 14 | − 1.4 |
| Chrysler | 100,063 | 18 | 18,517 | − | +440.4 |
| Phillips Petroleum | E 95,000 | 19 | 76,235 | 19 | +25.0 |
| International Nickel | 91,567 | 20 | 65,295 | 25 | +40.2 |
| Aluminum Co. of America | 87,601 | 21 | 61,875 | − | +41.6 |
| Republic Steel | 86,271 | 22 | 52,875 | − | +63.2 |
| Eastman Kodak | 85,600 | 23 | 69,822 | 21 | +22.6 |
| International Paper | 83,105 | 24 | 67,476 | 23 | +23.1 |
| Sinclair Oil | E 80,710 | 25 | 74,623 | 20 | + 7.2 |

E Company estimate * Excludes non-recurring profits

©BUSINESS WEEK

# It's GM—by Half a Billion

There was some shifting around in the rankings of the nation's 25 top-earning companies last year, especially among the last dozen or so. The top 10 stayed pretty much as they were at the end of 1954, with General Motors the front runner by a country mile. GM further distinguished itself by being the first corporation ever to earn over $1-billion in a single year. Its earnings of $1.2-billion were roughly $500-million ahead of those for the runner-up, Standard Oil of New Jersey.

• **Ford's Debut**—The booming auto year propelled GM to an all-time high in earnings. And it also accounted for Ford Motor Co.'s fourth place showing. Ford's name makes its first appearance on the list this year—but only absence of firm figures on the company's earnings kept it off in past years. The motor company's estimated earnings of $437-million for 1955 enabled it to edge past E. I. du Pont de Nemours.

Du Pont had earnings of $431.6-million (over 31% of this came from dividends on GM stock holdings) and slipped into fifth place. The Bell System held on to the No. 3 spot.

• **Steel Earnings**—The 1955 boom was reflected in the showing of the nation's three largest steel companies, too. U.S. Steel's earnings rose 89.4%—to $370-million—in 1955, enabling Big Steel to skip up into sixth place from ninth in 1954. Bethlehem, No. 2 producer in the country, showed a gain of 35.7% and moved up only one notch in the standings. Republic Steel last year piled up a 63.2% increase in earnings and took over the No. 22 spot.

There were two other new faces among the 25 top earners last year—although both were not total strangers to the list. One was Aluminum Corp. of America, which finished 21st on the strength of a 41.6% gain in earnings last year. The other company was Chrysler Corp., an oldtimer on the list until a dismal showing in 1954. But last year, Chrysler's earnings boomed to $100-million, a fivefold increase over 1954, and the company wound up in 18th place.

One rather startling footnote to the latest compilation of the nation's 25 top earners emphasizes the size and earning power of General Motors: GM's 1955 earnings exceeded the combined earnings of the last 14 companies on the list. END

Plastics Engineering Co., Sheboygan, Wisconsin, operates two fire-safe Allis-Chalmers fork trucks. One works in the kettle room where alcohol fumes are a hazard. The other moves material in the grinding room where there is danger of dust explosion.

*when the sign says* **FLAMMABLE**

## *. . . better play it safe with Allis-Chalmers safety diesel trucks*

In many plants, the very atmosphere is explosive because of dust or fumes. A single spark can touch off disastrous fires. While conditions like this call for the utmost care, the need remains for efficient material handling.

To meet this need, Allis-Chalmers has developed a Safety Diesel Fork Truck especially for hazardous areas. It runs on low-volatile fuel and requires no electrical system. The starter is hydraulic, gauges are mechanical, the horn is air-operated. As further precautions, surfaces of the manifold and muffler are water-cooled, exhaust gases pass through a water quench, tires are grounded — the forks may be spark-proof manganese bronze.

These fork trucks are approved by the Mill Mutual Fire Prevention Bureau, and are in use at a rapidly growing number of plants where explosive conditions exist. Whether you need fire-proofed safety or unmatched material handling efficiency, you'll find an Allis-Chalmers fork lift truck is your wise choice. Write for literature, or get all the facts from your Allis-Chalmers Buda Division dealer.

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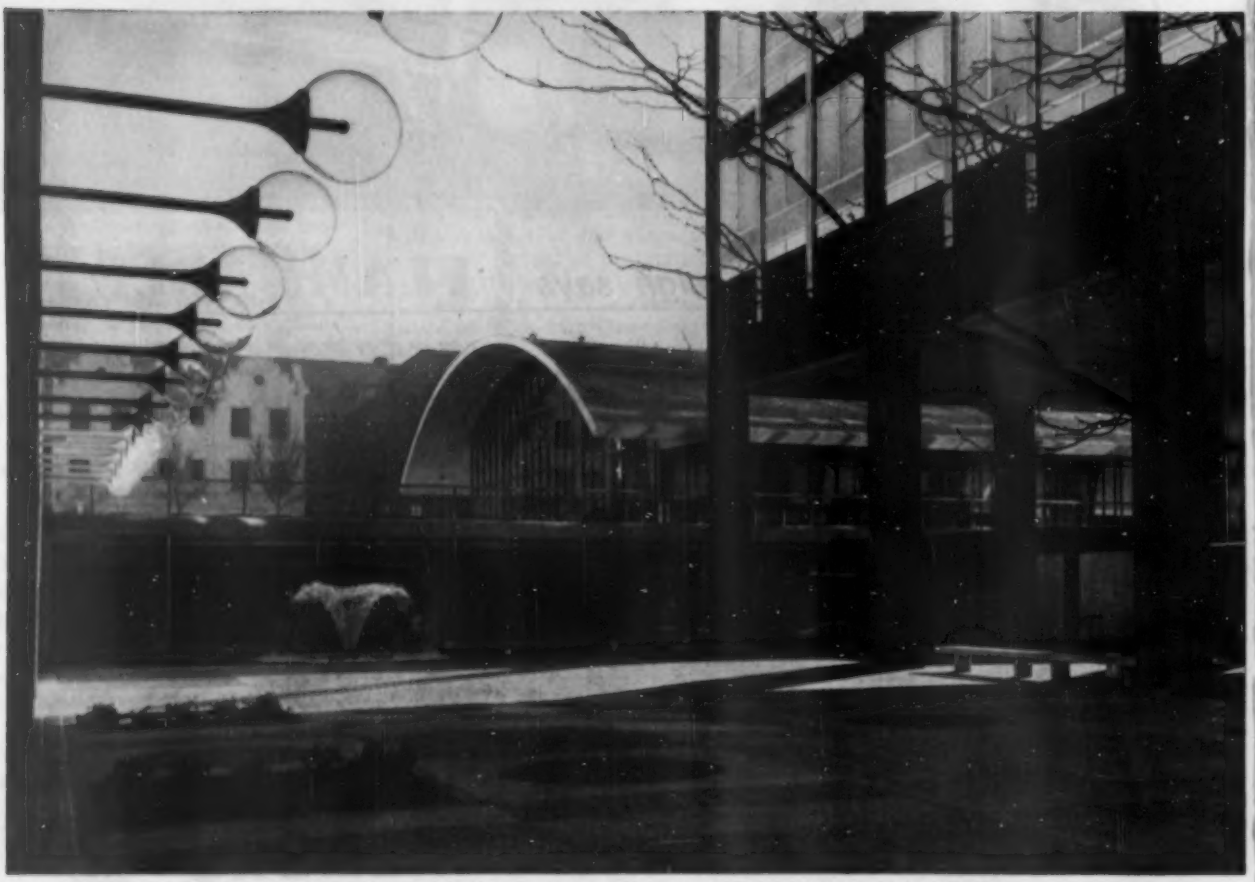
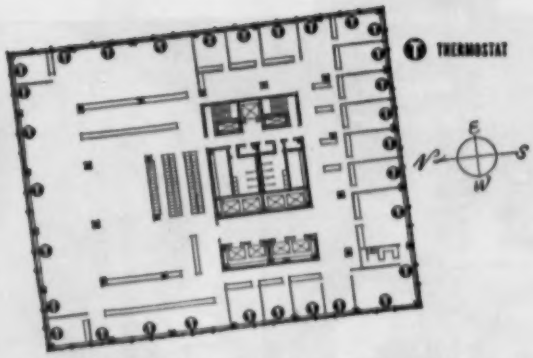
# How Honeywell helps give Denver's



*Mile High Center office building, Denver. Owners: Webb & Knapp and George A. Fuller Company. Architects: I. M. Pei & Associates; Kahn & Jacobs and G. Meredith Musick. Consulting engineers: Jaros, Baum & Bolles; Severud-Elstad-Krueger. General contractor: George A. Fuller Company. Prime mechanical contractor: Kerby Saunders, Inc. Plumbing and heating contractor: Crabb Plumbing & Heating Co. Electrical contractor: Fishbach & Moore.*

**Remarkable sense of space** is present in outside offices such as this one, occupied by Webb & Knapp senior vice president, Arthur Rydstrom. Open effect is created by strip windows at floor level and larger glass panels above. Despite such free use of glass, comfort is constant. In offices tenants need only dial their choice of temperature; the Honeywell Customized Temperature Control installation then maintains it accurately and efficiently.




**Individual office temperature control** is indicated in this typical Mile High Center floor plan, showing Honeywell thermostat locations. Flexibility and quick response of the Honeywell Customized installation helps solve another problem, too. At Denver's elevation, one side of the building often needs heat while the other needs cooling. Electronic solar thermostats on the roof activate cooling according to changes in the direction of the sunlight striking the building.

# Mile High Center ideal comfort

***Honeywell Customized Temperature Control allows tenants to choose individual comfort preferences***

BUSINESS quarters completely modern in concept are provided by the new 23-story Mile High Center office building that dominates Denver's skyline.

Ideal indoor weather was assured by the building's planners. For they chose a Honeywell Customized Temperature Control installation to govern the year-round air conditioning system, giving tenants individual comfort control.

Adjoining the central structure is a three-level transportation building with a lower level concourse where shops and restaurants are located. Because of the flexibility of Honeywell controls, customized comfort is enjoyed throughout Mile High Center—from lofty offices to lower level shops.

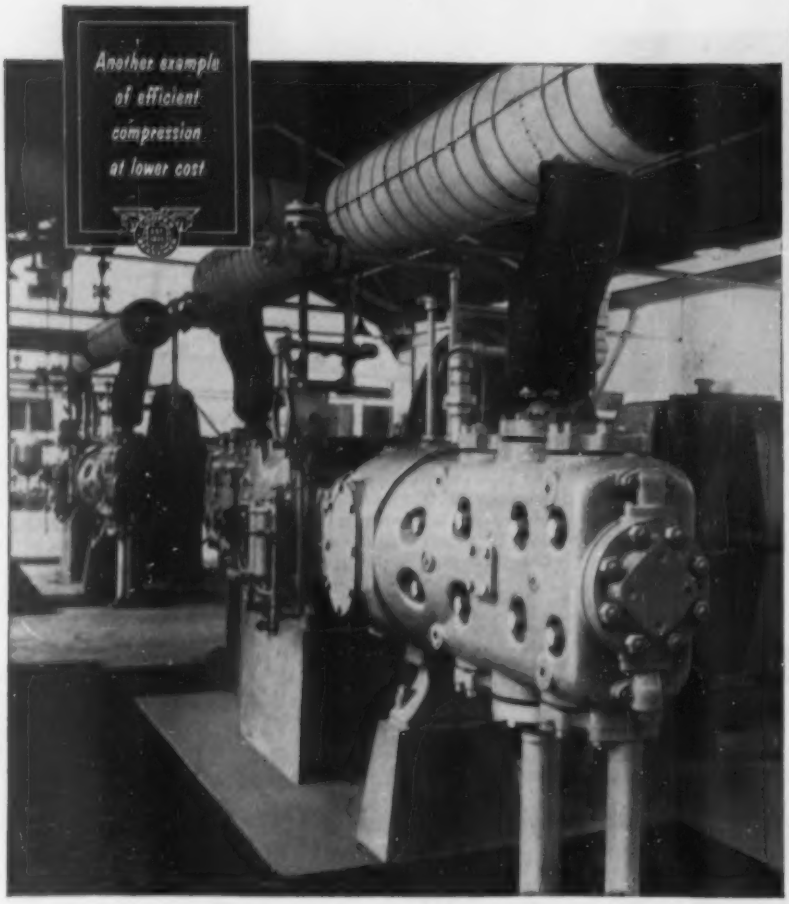
That's what "customized" means—a control installation fitted to the needs of the building and its occupants, in heating, cooling, ventilating and humidity control.

True customized control can be provided only by Honeywell. Because only Honeywell manufactures all three types of controls—pneumatic, electric and electronic. Hence only Honeywell is in a position to make truly objective recommendations.

Whether it's an office building, factory, bank or store—any building of any size, new or existing—Honeywell can help solve your problems of heating, ventilating, air conditioning and industrial control. For full details on Honeywell Customized Temperature Control, and the economical Periodic Maintenance Plan, call your architect, engineer, or local Honeywell office. Or write Honeywell, Dept. BW-3-64, Minneapolis 8, Minn.

MINNEAPOLIS
**Honeywell**

**Customized Temperature Control**

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# Going Home

## With boom-time funds, Canadians are buying back their country's senior securities from U.S. investors

Canadians, wallowing in the after-effects of their best year ever—their gross national product grew some 10% in 12 months and hit a peak of $26.6-billion last year—have changed the pattern of the flow of capital across the U.S.'s northern border.

In 1954, U.S. investors put $6-million more into Canadian securities than Canadians put into U.S. issues. But last year, the Canadians turned that pattern around sharply. They ended up with a net export of investment capital totaling $36-million.

Canada's securities trading with other countries reached a record last year along with the 10% jump in the country's GNP. The dollar volume of securities trading hit $2.3-billion. That was a 50% increase over 1954.

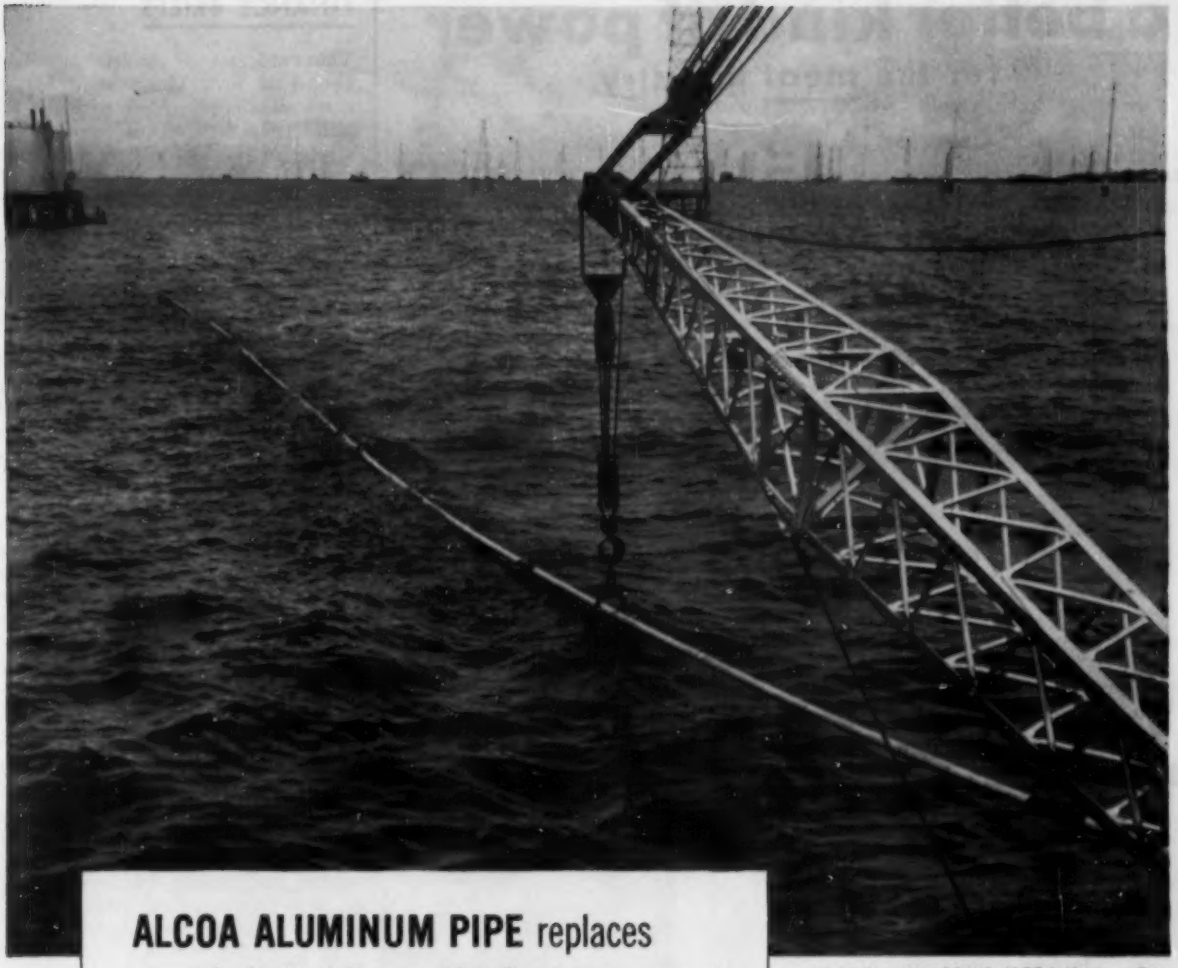
• **Preference Indulged**—And in their dealings with U.S. investors, Canadians doubled their purchases of the securities they traditionally like: the preferred stocks and debentures of Canadian companies. Last year, they bought a total of $162-million worth of these from U.S. holders. In 1954, they bought only $86-million worth of them.

Their preference for preferreds and debentures is reflected, too, in the flow of common stocks across the border. While Canadians were buying an unprecedented amount of those senior securities of Canadian corporations from U.S. investors, they were selling a net $95-million worth of Canadian equity issues to Americans. In 1953, their sales of these common issues totaled only $85-million worth.

• **Run on Governments**—In buying their own senior debt issues back from U.S. investors, Canadians focused their attention most closely on Government of Canada direct issues. They bought $61-million worth of these.

U.S. buyers took $31-million of Canadian corporate and industrial bonds, while Canadians repurchased around $44-million worth of these.

Seven Canadian investment funds were responsible for much of the big jump in the net outflow of capital from Canada for purchases in the U.S. These funds have been operating under present regulations since only the middle of 1954. The Canadian Government itself credits the increased volume of securities trading as a whole to better economic conditions, expansion of Canadian industry, improvement in the value of the U.S. dollar. END



# **ALCOA ALUMINUM PIPE** replaces corroded steel in world's first permanent aluminum underwater oil pipeline

**Welded section of 4-inch ALCOA Aluminum Pipe being lowered into Lake Maracaibo, connecting underwater well of Creole Petroleum Corporation to flow station. After double jointing on shore, only six and one-half hours were needed to complete the job from the time welding operations began on the construction barge until the pipe was laid, nearly 20 feet below the lake surface.**

Seven hundred feet of uncoated ALCOA Aluminum Pipe was recently submerged in Lake Maracaibo, Venezuela, as a pilot installation of the world's first permanent aluminum underwater oil pipeline. Corrosion-resistant ALCOA Aluminum replaced steel pipe carrying crude oil from an underwater well to a flow station in Creole's Bachaquero Field. Experience had shown that the steel pipe's protective coating was attacked by an aquatic borer, the Teredo, exposing the steel to corrosive action of the lake's brackish waters.

ALCOA's successful five-year operation of an undersea aluminum gas line in Matagorda Bay, Texas, demonstrated aluminum's suitability for this type of application. Moreover, exhaustive tests conducted by ALCOA's Aluminum Research Laboratories indicated that certain ALCOA Aluminum alloys have the necessary resistance to salt water and crude oil corrosion to last many years at this installation.

ALCOA Aluminum Pipe has other advantages as well. It is light in weight for quick assembly and portability. It costs less per foot than any other corrosion-resistant metal pipe, and its ease of installation adds to its economy. Its nonsparking characteristic insures the safe handling of inflammables. Some sizes are available in more than one thickness to meet varying service requirements.

Compare the advantages of ALCOA Aluminum with the pipe you are now using. Write today for the new, FREE booklet, *Alcoa Aluminum Pipe and Fittings*, which gives valuable technical data plus complete information on cutting, bending and joining. Use the coupon.

Aluminum Company of America
881-C Alcoa Building
Pittsburgh 19, Pennsylvania

Please send me your **FREE** booklet, *Alcoa Aluminum Pipe and Fittings.*

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Company_____

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City_____ Zone____ State_____

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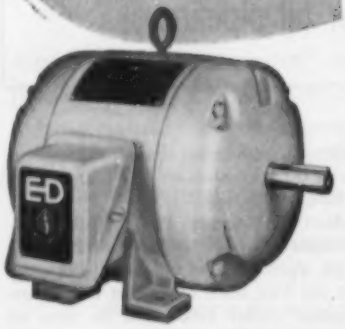
ALUMINUM COMPANY OF AMERICA

# a better kind of power
## for the meat industry

The mark of an Extra Dependable machine

Electro Dynamic, America's leading manufacturer of custom-built motors since 1880, now offers both *standard* and *special* motors for meat processing machinery.

The red E.D. "power spot" is your assurance of *extra dependable* Electro Dynamic power – 75 years in the making – yours today *at no extra cost!*



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*Extra dependable motors*

*1 to 250 hp. AC and DC. Standard or special purpose. N.E.M.A. standards.*

GD

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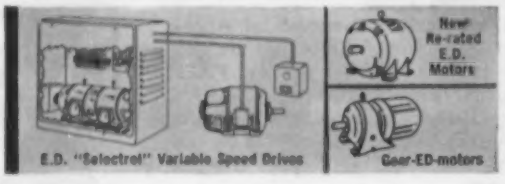
***NEW...***

Write for Brochure 50 and literature on new E.D. motors and drives.

Electro Dynamic division of General Dynamics Corporation Bayonne, New Jersey





## FINANCE BRIEFS

**Thin red legacy:** If you have any claims against the Soviet Government, Mar. 31 is the deadline for filing with the Foreign Claims Settlement Commission for a piece of the $9.1-million it holds for satisfaction of such claims. But the satisfaction is likely to be slight—there's an estimated $500-million of claims. A big chunk will be represented by Czarist dollar bonds, two issues of which were recently delisted from the American Stock Exchange to keep the Curb out of the claims hassle.

•

**Corporate bond rumblings:** Tide Water Associated Oil Co. unexpectedly trimmed back its latest debenture offering from $100-million to $50-million this week because of the shakiness of the market for better-grade—and lower-yield—corporates. Tide Water has decided instead to market an issue of $50-million of 30-year, 3¼% debentures, and has established a $50-million credit line with Chase Manhattan and other banks, the money to be drawn down by the end of the year at a 3½% rate.

•

**One reason** for Tide Water's troubles in the bond market, and some of the general hesitancy is the announcement last week of a $250-million issue of American Telephone & Telegraph debentures slated for June. This massive offering and others already scheduled, coupled with investors' stiffness toward recent issues, has made dealers edgy.

•

**Diversification with a capital "D":** The urge to diversify took another strange bounce last week as Detroit Hardware Mfg. Co., maker of builders' hardware, announced it had acquired all outstanding stock of Golden Gift, Inc., a Florida producer of canned orange and grapefruit juices.

•

**About $100-million** will be needed by some 10,000 small metals fabricators and manufacturers of electronics just to meet contractual obligations in the next year, according to a survey by Coastal Commercial Corp., a finance company. Tighter money and higher capital needs coupled with slower turnover of capital by these companies were cited as major reasons for increased demand.

•

**The St. Louis-San Francisco RR** now holds over 50% of the common stock and nearly half the preferred stock of the Central of Georgia Ry., which Frisco wants to control (BW—Dec.17 '55,p120). IGC is still considering Frisco's plan for control, which is opposed by a number of other roads operating in the Southeast.

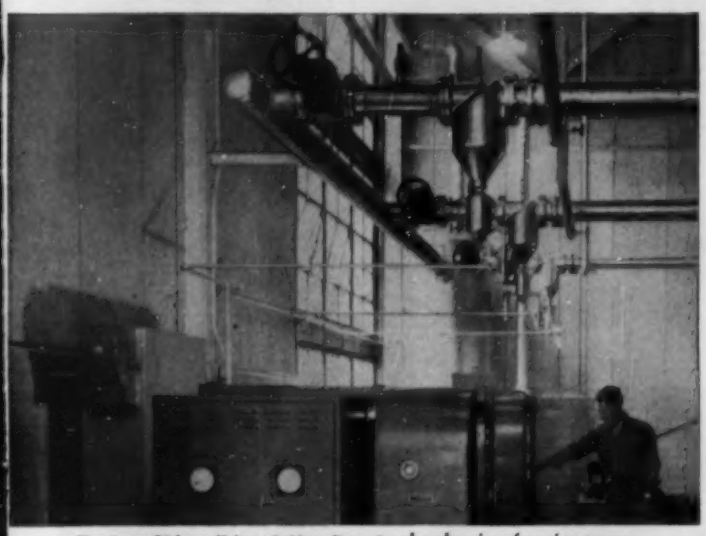
# TECTUM

Roof Deck and Sidewall Insulation Panels perform multiple functions by the acre for Fairchild Engine Division

MOST ROOF DECK and sidewall construction is thought of in terms of square feet. Not so at Deer Park, Long Island, plant of Fairchild Engine and Airplane Corp. Here, 9 acres of Tectum Roof Deck and Sidewall Insulation were used in 5 buildings which comprise this plant. And all 9 acres of Tectum were installed in a period of about a month—a significant figure since completed construction required approximately 20 months.

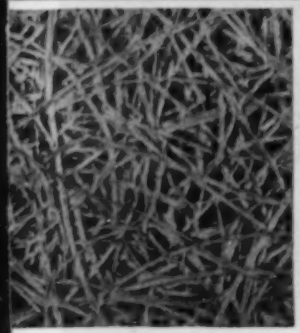
A Tectum Roof Deck is structural, acoustical, insulating and provides an attractive finished ceiling. It meets these four important "overhead" requirements with ease. Tectum Sidewall Insulation Panels meet and often exceed normal insulating requirements, reducing heating and cooling loads and improving employee morale. Disturbing noises are held to a minimum, absorbed by Tectum, rather than being reflected as with hard materials.

Consider Tectum for your next building project. Write for complete data or see your nearby Tectum Distributor. Tectum Division, Peoples Research and Manufacturing Co., 804 South Sixth Street, Newark, Ohio.



**Tectum Sidewall Insulation Panels** *absorb noise of engine room.*

**In drafting room,** *Tectum Roof Deck provides an attractive ceiling*



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**For Plants • Commercial Buildings • Institutions • Homes**

1941 ——— 1956

*As TMI passes another important milestone in the precision service of American Industry, the successes of our yesteryears indicate new and even greater recognition for this familiar symbol:*

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# Better Tubing is a Better Buy

We've built our reputation on this premise! TMI precision has cut machining and assembly costs on countless production lines, made many a pioneer engineer's dream come true. It has proven its worth with profit-minded management from coast to coast. And, the friendly TMI organization is well known for its ability to meet "almost impossible" delivery deadlines. TMI concentrates on quality rather than tonnage, better tubing that's a better buy—always!

***Small Diameter Stainless Steel and Alloy Tubing for Top Flight Applications***

*We specialize in small diameters, .050" to .625" O.D., in tolerances as close as .001", in perfect finishes, inside and outside. And: in solving tubing problems! Your inquiries are always welcome and receive prompt attention.*

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BRIDGEPORT (Montgomery County), Pa.

## MARKETING

# PROBLEMS FOR MAGAZINES: Subscription Vs. Newsstand Sale

**Single-copy sales for top 10**

| | Percent of Total Sales | | |
|---|---|---|---|
| | *1939* | *1944* | *1955* |
| Life | 59.8% | 46.8% | 19.0% |
| Saturday Evening Post | 60.4 | 48.1 | 34.3 |
| Time | 22.4 | 32.2 | 13.3 |
| Look | 76.9 | 69.1 | 26.4 |
| Better Homes & Gardens | 19.1 | 30.6 | 35.7 |
| Ladies' Home Journal | 45.1 | 48.8 | 36.2 |
| Newsweek | 17.6 | 45.7 | 15.6 |
| Collier's | 42.3 | 38.8 | 23.2 |
| Good Housekeeping | 26.9 | 43.5 | 27.6 |
| McCall's | 41.6 | 57.5 | 28.8 |

*Data: Standard Rate & Data.*

BUSINESS WEEK

**Union News (below) didn't carry some best-selling magazines during price fight.**

**Independents flaunted ad of disputed publications. Fight, now over, reflected . . .**

# Grey Days for the Newsstands

Commuters who have been staring blankly out the windows of their trains a couple of afternoons a week for the last few months this week began slipping quickly back to their old reading habits again. They've been missing some of their favorite magazines on Union News Co. stands in terminals all over the country. The dispute that since January has kept 17 magazines—including such big fellows as Life, Time, Reader's Digest, McCall's—off Union News counters has ended.

Thus, at least one of the cracks caused by the shifting stresses of magazine distribution was patched up. These stresses stem primarily from one source: the decline in recent years of newsstand magazine sales. Publishers, who relish no sales decline—whether by subscription or by newsstand—have been jockeying for the best way to shore up sales. Magazine distributors, who get their bread and butter from newsstand distribution, have stepped up their competition for the business that is left.

• **Big Battlers**—The contestants in this latest battle were Union News (owned by American News Co.), the nation's biggest magazine retailer, and S-M News Co., the nonprofit, cooperative distributing agency of six publishers, McCall Corp., Meredith Publishing Co., Popular Science Publishing Co., Reader's Digest Assn., Inc., Street & Smith Publications, Inc., and Time, Inc.

Neither contestant would say what the terms of the settlement were. "We kissed and made up," they say. Nor would they spell out in detail what the dispute was about.

The clash was, primarily, over the question of how much S-M News magazines should pay for distribution through American News and Union News. But it's also apparent that in the background there has been some jockeying for power among the parties. The complexities of magazine selling and some of its latest developments show how this struggle started.

## I. The Channels

Magazine publishers today have their choice of two channels for newsstand distribution: They sell to American News Co., 92-year-old giant wholesaler (BW—Feb.5'49,p66), or through one of the independent national organizations, such as S-M News or Curtis Circulation Co.

• **Exclusive Deals**—American News operates through some 320 branches throughout the country. There's one branch to each city, and as a whole, these branches add up to national coverage. Publishers who contract with American give it an exclusive franchise to handle their magazines in the areas served by the branches. The publisher ships his magazines directly to the branches, which distribute them by truck to newsstands, cigar stores, stationery stores, and Union News stands.

Like any other wholesaler, American buys the magazines at one price—say, 17¢ for a 25¢ magazine—and sells to the retailer at perhaps 20¢ a copy. But magazine distribution differs from most other distribution in that: (1) The retailer can return unsold copies—100% in the case of the big magazines—and collect the cost of his unsold magazines

**The Standard Bearers**

Beyond safe and economical shipping, Fort Wayne corrugated containers give you plus value as sales promoting standard bearers for your product. Improved finishes, quality design, rich color and advanced printing methods combine to make every container a traveling delegate, carrying your name, slogan, trade mark or sales message into the outlying precincts. Get Fort Wayne into *your* sales campaign.

Fort Wayne
CORRUGATED PAPER COMPANY
GENERAL OFFICES • FORT WAYNE 1, INDIANA
Corrugated Fibre Boxes • Corrugated Paper Products

from the wholesaler; and (2) the wholesaler similarly can collect the cost of his unsold magazines from the publisher.

• **Competitors**—S-M and other national distributors operate in the same way—except that they own no branches. They deal with local independent wholesalers, who usually distribute newspapers as well as magazines. There are about 800 such wholesalers in the country, again usually one to a city. If a town is served by both American and an independent, retailers buy from both.

## II. Shifts and Strains

In the competitive battle for distribution, American has had one big weapon: its ownership of Union News Co. In many cities the Union News stands have such heavy-traffic spots as railway terminals sewed up.

But until last summer, Union News' policy was to refuse to sell magazines unless American News distributed them; and American News' established policy was to demand all-or-nothing distribution of a magazine it served. It would not accept distribution for, say, only five cities.

Last July, under a new president, Henry Garfinkle, American dropped its old policy and agreed to handle local distribution (BW—Jul.23'55,p106). It also announced a stronger merchandising program to boost stand sales. This reversal was aimed primarily at building volume. An additional reason for loosening up was that at this time American and Union faced an antitrust suit.

• **Sales**—Slipping sales had bothered all wholesalers, but perhaps American had more cause to worry than most. Over the years it had begun to lose its dominant position. Other independents, newer at the game, were less hidebound. Publishers defected: Time, Inc., switched to S-M News (BW—Jun.25 '55,p62); Look moved to Curtis.

• . . . **And Suits**—The antitrust suit, dating from 1952, charged that the American-Union tie gave American a club to hold over publishers' heads. Last August, American and Union signed a consent decree. Boiled down, this was an agreement by both concerns to act solely in their own individual interests in conducting their businesses—that they would not consider one another's interests as a factor. Union would buy and display magazines as best fitted its own sales, not American's.

American would not try to bring in new customers through claims that it could get preferential display at Union News stands. Both agreed not to condition Union's sale of a magazine on the requirement that American distribute the magazine nationally, or

# with Worthington FLEXI-COOL air conditioner

A new concept in air conditioning gives you back the floor space you give up with a conventional air conditioner.

Called the FLEXI-COOL System, this remarkable Worthington development is sectionalized to go virtually any place you please—it can even be hung from your ceiling! That means you can add (or retain) a desk, a showcase or display counter—and still enjoy cool comfort.

What's more, you can have either air-cooled (wonderful where water's short) or water-cooled operation. Or you can switch from water-cooled to air-cooled later on—that's how flexible FLEXI-COOL is!

See your Worthington CLIMATE MAN's unusual demonstration of FLEXI-COOL right in your office or store. Call your Worthington dealer—he's in the Yellow Pages of your phone book. Worthington Corporation, Air Conditioning & Refrigeration Division, Section A.6.37-W, Harrison, N. J.

**COMPLETE FLEXI-COOL UNIT** mounts horizontally on ceiling to save floor space. Individual sections may be placed separately as a remote air- or water-cooled installation.

**WORTHINGTON**

*CLIMATE ENGINEERS TO INDUSTRY, BUSINESS AND THE HOME*

Look for the seal of the Worthington Climate Man

A.6.37

"—for Mr. Robinson." She looked pointedly at the Treasurer.

# The Treasurer takes a phone call

"I'd really prefer *not* to do it myself!" The President was more than usually positive.

"Well, sir—" and the Treasurer *never* called the President 'Sir' except at times like this "—if you'd rather, I'm certainly willing to do it. If you hadn't been *going* to Denver for the Convention—" he raced on past the other's efforts to get a word in "—I would have gone automatically and—"

"Oh, I know that, Charley!" the President broke in. "But look here—" and his smile belied the severity of his tone as he went on, "—if *you* went, you'd collect the amount due, all right, but we'd probably lose the account as a customer—Yes, Miss Trevor?" The President's question was toward his secretary, demurely poised at the half open door.

"I have a call for Mr. Robinson." She looked pointedly at the Treasurer.

"I'll take it here," the Treasurer said.

"Go ahead, Charley." The President dropped into his chair.

The Treasurer picked up the phone. "Yes?" he said.

"Oh, yes, Don!" said the Treasurer.

"Well, well," said the Treasurer, "Denver, eh?" The President looked up at him suspiciously.

"That's fine," said the Treasurer.

"I'll have to let you know," said the Treasurer. "Thanks very much." He hung up.

"Well?" the President inquired.

"*Very* well!" The Treasurer grinned at him.

"Come on, out with it, Charley!" the President urged. "You take a phone call here that breaks into our discussion of the Denver account, and it turns out to be something *about* the account, doesn't it?"

"I confess," the Treasurer said with mock humility. "And I apologize for asking *you* to approach one of our overdue accounts! It seems that we are already represented by attorneys in Denver."

"Then you *did* find a good lawyer?" The President's voice was eager.

"No, I *didn't*," the Treasurer said. "But American Credit Indemnity did—or already had!" He laughed aloud. "That was Don, our Credit Manager," he went on. "He says American Credit Indemnity has collected the Denver account for us! Don placed the account with them about a week ago, and they have a Service Department to take care of things like that.

"The account not only paid up, but—" and he paused to let his final statement sink in "—they want to duplicate their last order. We'll have to discuss terms with them—or do you want to handle that personally while you're in Denver?"

"I think I'll do just that," said the President gravely. Then he and the Treasurer both laughed, to the great mystification of the President's secretary, once again demurely poised at the half open door.

• • •

A service Department for handling collections is only one of 12 major benefits of American Credit Insurance. For your copy of a booklet, "*A Preface to Profits*," write American Credit Insurance, Dept. 42, First National Bank Building, Baltimore 2, Md.

*American Credit Indemnity*

COMPANY OF NEW YORK

distribute it locally to retailers other than Union.

• **Watchers**—American's decision to accept magazines for partial, not national, distribution had one immediate effect: Independent wholesalers, many of whom live by handling non-national magazines in their own particular territories, started organizing. Some 330 of them last year formed the Council for Independent Distribution. This is a kind of watch and ward society; one of its main jobs is to keep track of what American News is doing. During the past month there have been several clashes between CID and American.

## III. Latest Round

That's one side of the struggle in magazine distribution. Another aspect of the struggle is the dispute that kept commuters from reading some of their favorite magazines on the way home during the last couple of months.

According to S-M News, its dispute with Union News arose over the efforts of Union and American to raise commissions and allowances on S-M News' magazines to "unreasonable levels." Union's grounds in asking for the extra payments were that it has big-volume, high-rental locations, and that this entitled it to above-average rates.

• **How It Happened**—According to a trade source, the dispute got into an impasse when S-M News agreed to pay Union the higher rates—if it could get its magazines into the Union stands without having to deal with American News. Union wouldn't accept this condition. S-M then agreed to use American News as distributor—until it found that American, too, was asking for a wider margin. At this point negotiations broke down, and S-M magazines went off the Union News stands.

Whatever the terms that settled the dispute, it looks as though S-M News wanted to strengthen its hand by bypassing American. The settlement testifies to the fact that both sides need each other.

## IV. Newsstands' Decline

A look at the way newsstand sales have been going in the last decade shows why the two have become so dependent on each other (table, page 66).

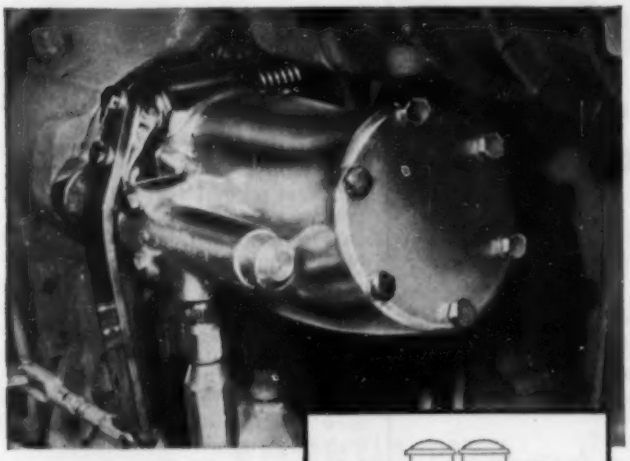
• **Suburban Shift**—Changed consumer habits seem to be the big culprit. The most important is the march to the suburbs. This, many publishers feel, creates a market that wants its magazines at home; it tends to build up the subscription business. There are other causes, too: Prices of magazines have gone up, and buying single copies is not the economical way to buy. The

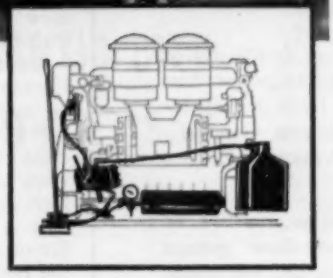
## *It takes a power shovel*

## *half a second to dump a bucket*

## *But a Hydrostarter starts a GM Detroit Diesel in*

## *One-Third the Time*





Heart of the Hydrostarter is this hydraulic starting motor. Other components are an engine-driven pump, accumulator, emergency hand pump and reservoir.

15/100 of a second. That's the split-second it takes a Hydrostarter to start a General Motors Detroit Diesel. And a Hydrostarter cuts your operating costs—costs less to maintain even than regular starting systems. In a recent 26-day test one Hydrostarter started a GM Detroit Diesel 26,788 times. For sure, fast starts even at 20° below zero, specify a Hydrostarter on your next GM Detroit Diesel—or have one installed on your present engine. For more information call your GM Detroit Diesel distributor, dealer or write direct.

**DETROIT DIESEL**

**Engine Division of General Motors • Detroit 28, Michigan**

*Single Engines . . . 30 to 300 H.P. Multiple Units . . . Up to 998 H.P.*

AMERICA'S LARGEST BUILDER OF DIESEL ENGINES

five-day week has cut sales in such areas as New York's Wall Street, where Saturday can no longer count as a big sales day. By the same token, the more the suburban housewife cuts down her shopping trips, the fewer chances she has to yield to the impulse to pick up a magazine while she shops.

• **Subscriptions' Safety**—Among the big magazines at least, slipping newsstand sales don't spell catastrophe so long as total circulation is up—and in most cases it is. Partly that's the result of publishers' determined efforts to go after the subscription trade.

In some respects, subscriptions look like a better market to them. The publisher can count on this circulation—and he must be able to show the figures to his advertisers. Many people believe it's a preferred market on the income score—and advertisers like this, too. Magazines believe that readership of subscription copies is wider.

• **Cheapest Way?**—But there's still no answer to the question: "Which form of circulation costs less?" One big publisher says the cheapest kind of circulation is the regular renewal by subscription; it's worth sacrificing on an initial subscription offer to get the steady reader. But chopped initial-subscription prices, heavy mail-order advertising, and personal selling cut into profits.

Other publishers think newsstand circulation is cheaper. But heavy returns can ruin the profit picture, especially for the big magazines. The cheaper magazines can get along with heavy returns, but the high-cost publication suffers. The most the publisher hopes for from circulation is to recover as much as he can on his cost—he looks to advertising for his profit.

Returns can hit wholesalers and retailers, too. True, they do get back their costs on returns—but you don't make profits just by recovering costs.

• **Vital Spots**—If the current drift to the suburbs seems to put greater weight on subscription circulation as far as the publisher is concerned, it by no means indicates that the publishers are going to watch newsstand sales dwindle without taking action. Newsstands have a vital function. They display the new copies as they come out, woo the new reader. They play a big role in establishing a new magazine. It's probably no accident that in 1939, three-fourths of the copies of the then 2-yr.-old Look were sold by newsstands, against one-fourth last year.

Also, if postal rates go up, subscription circulation will get still costlier.

Several publishers have made big efforts to stem the downtrend in newsstand sales, apparently to some effect. Most of them reported a slight recovery in 1955 over 1954. Many feel that the solution lies in a better wholesaling—and retailing—job. END

**Huge Hortonspheroids get ⅜" sprayed-on coating at SUNOCO**

*Graco Powerflo pumps come in a broad range of basic designs, sizes and power ratios. Graco engineers furnish test reports showing pumpability of your material plus suggested equipment. No obligation for this service.*

**At the Sun Oil Company's** Marcus Hook, Pa. refinery, the Earl Paint Corporation sprayed a ⅜" coating on seven 40,000 barrel Hortonspheroids.

Six Graco mogul-type Powerflo pumps on the job delivered 49,500 gallons (900 drums) of Erkote 3X Insulating Mastic, direct from original drums to multiple spray guns. Spray operators worked up to 150 feet away from the drums.

These rugged air-powered pumps have double-action delivery, for steady volume and tremendous power. You can use Powerflo pumps in 5-gallon pails or full-size drums, for spray or extrusion applications. Combinations of pumps, hoses, guns and special attachments are available to fit your requirements.

If your company uses paints, adhesives, mastics, or similar compounds—Graco's "direct-from-drum" pumps can mean dollar savings for you. Let us tell you about them . . . send today for your copy of the new Powerflo catalog, 54 pages of pictures and application data.

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**GRACO** *air-powered* **"DIRECT-FROM-DRUM" PUMPS**

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More than 400 varied exhibits of packaging equipment, materials, machines, supplies and services by the pace-setting manufacturers in the field—on both levels of Atlantic City's great Convention Hall.

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This is the recognized marketplace for all industry and business to solve packaging problems, spark new ideas, decide on purchases . . . the shortest cut to increased packaging production, sales appeal, product protection and convenience of consumer and industrial products.

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AMERICAN MANAGEMENT ASSOCIATION

# In Marketing

• • •

## Report to FTC Urges a Bit of Light On Cost Defense for Price Charges

There doesn't seem to be any way by which a businessman can have spelled out ahead of time what kind of cost savings he can use to justify him against illegal price discrimination charges under Robinson-Patman Act.

Robinson-Patman permits a business to charge some customers a lower price than others—usually illegal practice—if the company can show that selling to that customer costs it less than selling to another customer. But scarcely anyone has been able to make this section of the law work for him.

Two years ago the Federal Trade Commission named a committee of outside experts in costs and accounting to try to clarify the situation. Now the committee's report is in—but it doesn't help much. **Its basic recommendation to FTC is: Adopt a broad and flexible approach in evaluating cost justification arguments.**

Specifically, the committee, headed by Michigan University's Prof. Herbert F. Taggart, suggests that FTC:

• Set up consultation facilities to make FTC's own accounting staff available to businessmen charged with price discrimination.

• Appoint an accounting adviser to FTC members to write special opinions for the guidance of business.

• Use pre-trial techniques in FTC price discrimination cases to let businessmen know exactly what they will be expected to prove.

Since the report feels that it can't lay down detailed procedures for all businesses, it recommends that FTC should accept any cost justification study made in good faith and in accordance with acceptable accounting doctrines.

How FTC will react to these suggestions is still to be seen.

• • •

## New Movies Go for Box Tops To Keep Their Theaters Full

In their effort to boost sagging attendance, movie exhibitors have tried just about every known promotional trick. They have put in big screens, given chinaware away gratis, offered special rates for children, gone in for trading stamps.

Their latest is a new version of the familiar box-top offer long used by manufacturers of consumer products. **The idea is simple: The housewife tears a label or a box top off a food or toiletry product, mails it in, and gets a 25% discount on the price of admission at her favorite local movie house.**

The promoter of the idea is a company called Cinema Diorama Advertisers, Inc., which, until it got its newest brainstorm, was mainly in the business of placing moving advertising displays in supermarkets. Last week the company introduced something called Movie-Tix Premium Plan in the New York City area. It works like this:

• The company first lined up five makers of six products—Pabst Brewing Co. (Hoffman Beverages), Lever Bros. (Good Luck margarine), Borden Co. (Starlac, instant coffee), Scott Paper Co. (Scotties).

• Then it lined up major motion picture theater chains in and around the city, including Walter Reade, Paramount, and Skouras—189 movie houses in all.

• Next it began taking $400,000 in newspaper, television, and radio advertising, telling consumers that all they have to do is to tear off labels or box tops from two of these products and send these in with $1.50 in cash to Movie-Tix. In return the moviegoer gets a book of movie strips worth $2 at the box office.

Manufacturer and theater chain team up to foot the bill, though Cinema Diorama won't specify just how much each is paying. The theaters do their part by selling their $2 strip to Movie-Tix at a special bulk rate.

One advantage the plan has for manufacturers, says the company, is that they get "a high cash-value premium at a lower cost than the usual premium." One big saving arises, Cinema Diorama claims, because the manufacturer doesn't have to fool with redemptions.

**If the plan is successful, Cinema Diorama will expand it rapidly, taking on additional noncompetitive manufacturers, and going into Chicago, Philadelphia, and a string of other major cities.**

• • •

## Marketing Briefs

**No more trading stamps after Apr. 1:** That's the vote of some 160 independent gasoline dealers in the Toledo area. Cost and nuisance were cited as reasons. Dealers said they would have to raise gas prices if they continued with stamps. Some said the stamps cost them 2½% of gross sales.

**American Motors** thinks a name is worth $25,000. It is offering this as first prize for a name for its car with an integrated body. Though AMC has used the integrated body for some years, competitors' talk of doing the same (BW—Jan.21'56,p29) has prodded it to this promotion, to clinch its claim to being first.

**Home sewing will get another boost** in June, when the first annual Sewing Fashion Festival will open to the public in New York City's Coliseum. Sponsors include pattern makers, sewing machine companies, some big mills, and accessory manufacturers.

**Night shopping** appears to be on the upswing. Shillito's in Cincinnati recently opened its doors for Thursday night shoppers—and carried neighboring specialty shops with it. Trend toward family shopping (husband and wife together) spurred Rich's new department store in Knoxville, Tenn., to open both Monday and Thursday evenings.

**Exposition of Progress** is the name of the first exhibition to aim at the Negro market (estimated to be worth some $16-billion). Site of the show, which includes some top-brand manufacturers and merchandisers, is New York City's former Wanamaker Building.

# WASHABILITY

The dyestuffs and pigmented colors we supply for textile decoration must withstand repeated washing or dry cleaning; the lacquers and enamels we provide for household appliances must be impervious to soaps and cleaning compounds. That is why our laboratories are so concerned with the chemical stability of dyes and pigments, with the water-resistance of resins, with the compatibility of vehicle and coloring agent. The Interchemical approach is a technical attack, research-based, proven in many industries. If you have any kind of chemical coatings problem, we offer the authority of world-wide experience.

**The Interchemical Scrub Tester** measures the washability of metal finishes and textile colors. Coated test panels and fabric swatches are mechanically scrubbed by a weighted brush and soap or detergent.

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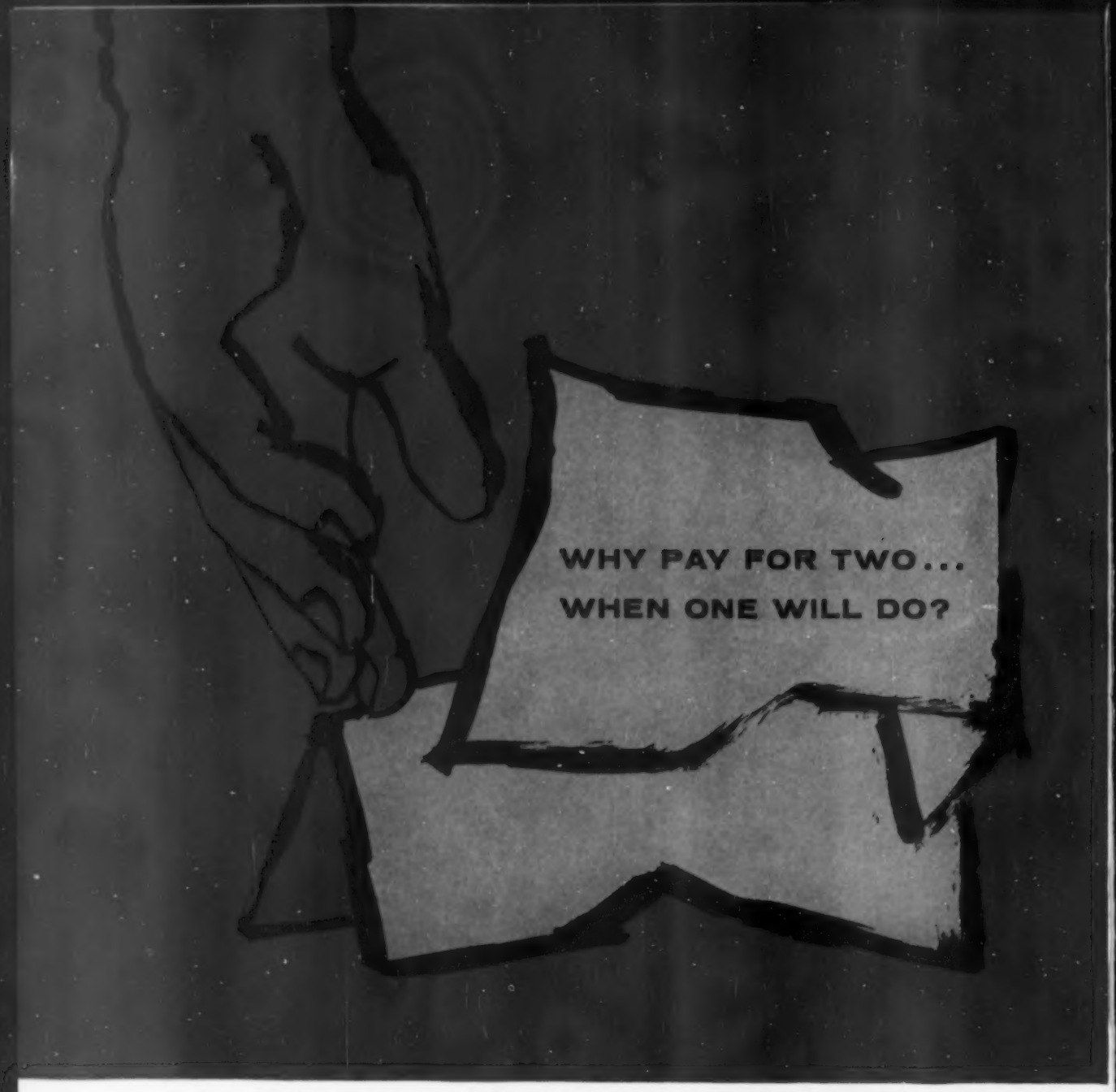


Fist test helps you see why Scott Towels cut towel consumption

Try this: Put your fist into a Scott Towel, see how it stretches and conforms to your hand—the drying surface comes into play instantly. This makes for thorough drying. The result: one Scott Towel is used instead of two or more.

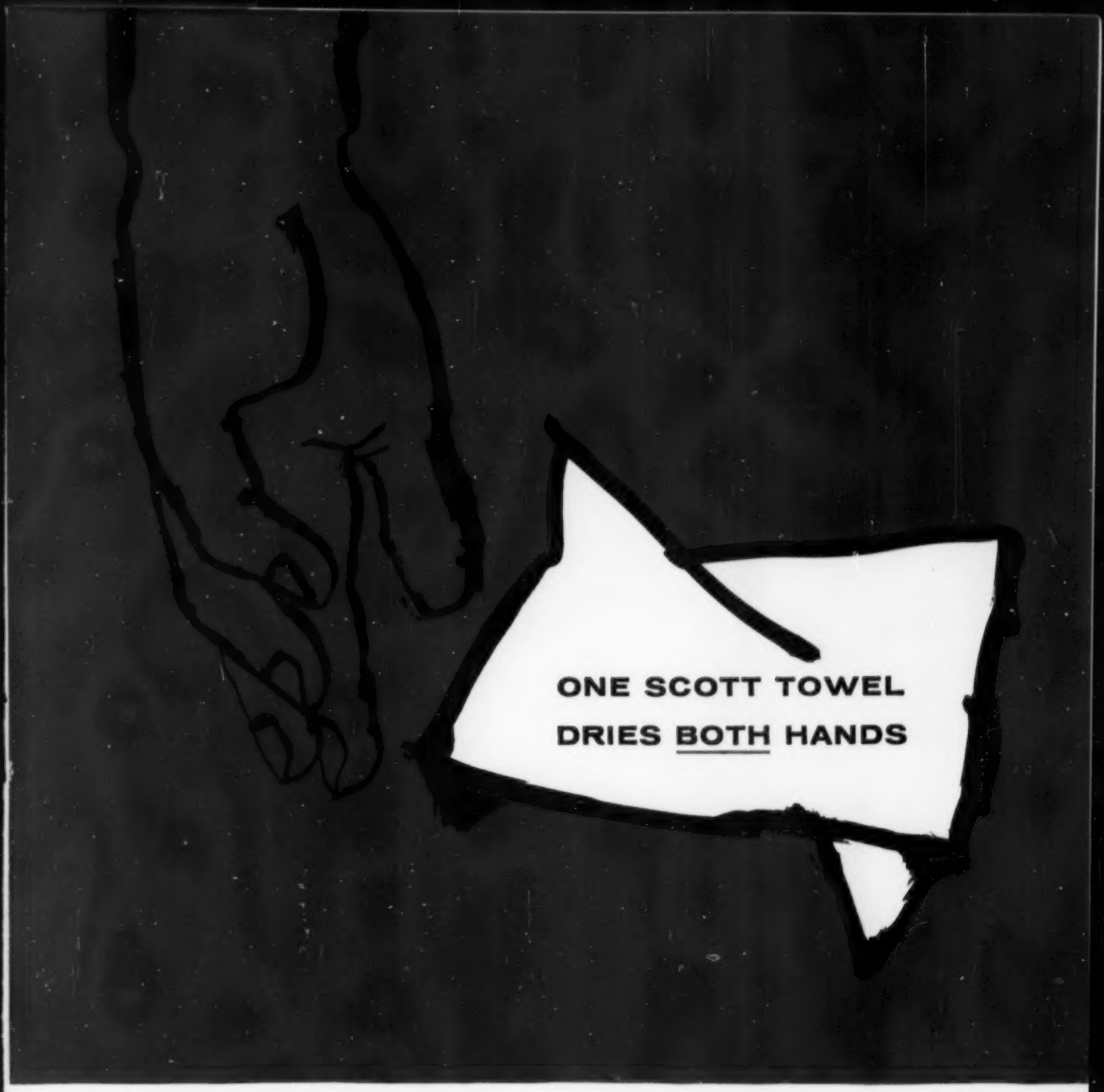

Photo: Gjon Mili

Inferior towels go to pieces when they're wet. It takes two, three—a fistful to dry both hands. Consequently, consumption is high, cost is high.

Not so with the quality Scott Towel. It's been designed for whiteness, softness—and most of all—absorbency. One Scott Towel dries two hands quickly and comfortably. There's no extra consumption, no extra washroom maintenance—cost is at a minimum.

Scott is the brand of towel your people buy for home more often than any other brand.

Give your local Scott representative or distributor a call today. Let him show you how you can determine the cost-reducing possibilities of Scott Towels in your washrooms.

Another quality product of the

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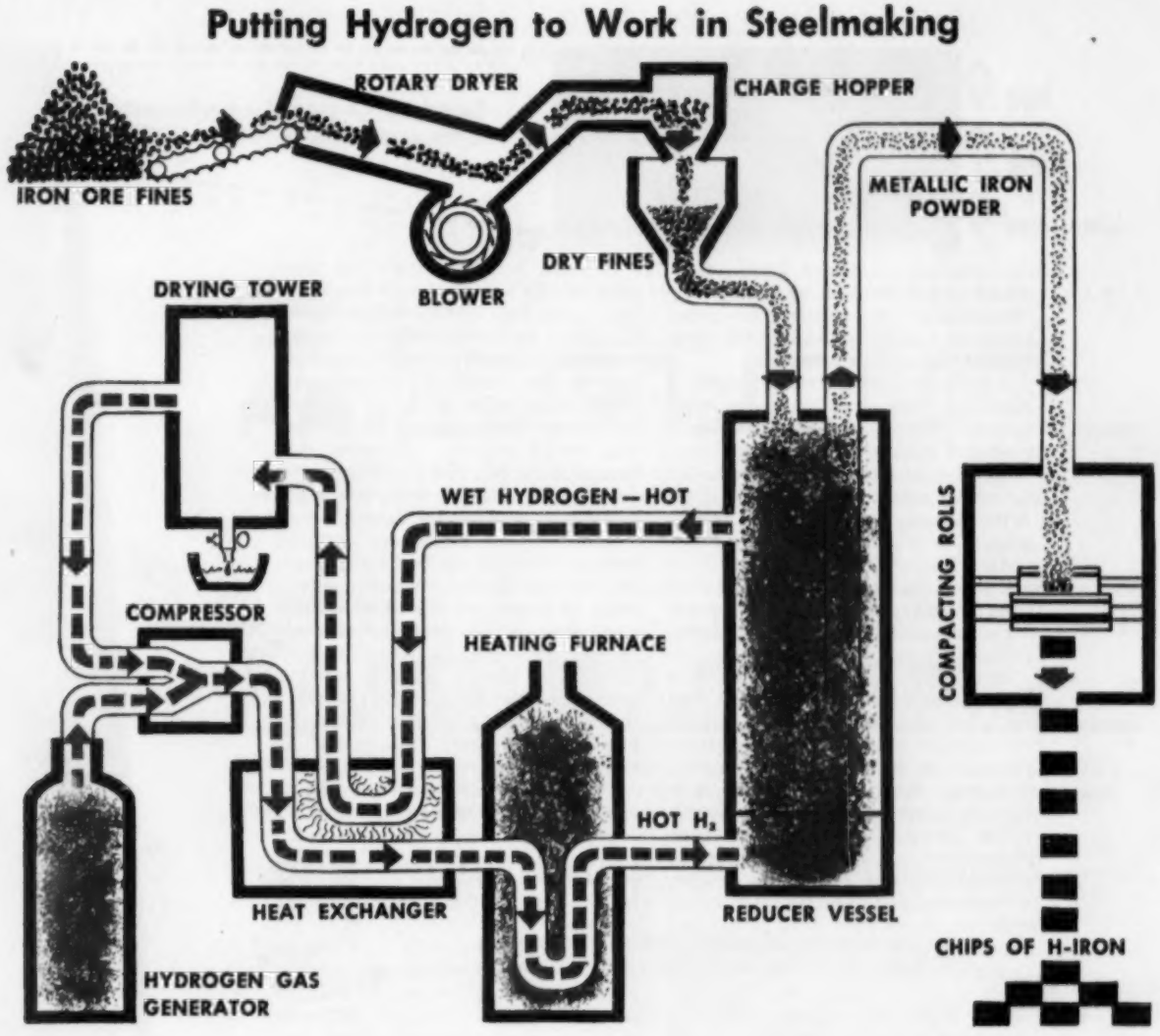



# Getting More Iron Out of Ore

For a generation or two, the steel industry has devoted most of its inventiveness to improving steel products, perfecting the steel finishing processes. Now, the scientists and engineers are working their way back through the production chain, seeking to improve technique and cut costs at the steelmaking stage, the ironmaking stage, and even the preparation of the iron ore.

Among the boldest new ideas is the "H-Iron" process (drawing above) for reducing iron oxide to metallic iron in a single step, using high pressure hydrogen. As an alternative to the conventional blast furnace, the H-Iron plant may help solve the steel industry's most pressing problem—the high cost of expanding capacity at today's prices.

A second way to expand output without paying $300 or more per ton of annual capacity is to get more tonnage out of existing plant. This development is being spurred by methods of sintering fine ores (baking them with fine coke to make them stick together) and of using hotter air blasts in the furnaces (drawings on following pages).

## I. H-Iron Process

The big advantage of the H-Iron process is that it eliminates the elaborate process of charging the blast furnace with limestone, and coke, and ore in successive layers. It also eliminates the elaborate chemical changes that this mixture goes through inside the stack. Instead it works by passing high-pressure hydrogen gas through a mass of fine ore. The hydrogen reduces the ore (iron oxide) directly to iron. The whole process takes place at relatively low temperature, and the product is iron metal that is free of the carbon and sulfur that pig iron ordinarily picks up from the coke in the blast furnace.

Apparent cost-saving advantages of the process have added urgency today because:

- New blast furnace capacity is the

# These Techniques are Boosting

most expensive and least flexible component of new steelmaking plant—using "steelmaking" to include coke ovens and blast furnaces as well as the open hearths that make steel.

• The oxygen converter process, a promising method of increasing steel output (BW—Nov.26'55,p58), uses a good deal more iron than it does scrap. Thus it tends to upset the metallics balance of existing plants.

• **Bethlehem in Deal**—The H-Iron process is a joint project of Hydrocarbon Research, Inc., of New York and the Bethelehem Steel Co. For two years the companies have been operating a semi-commercial plant at Hydrocarbon's Trenton (N.J.) laboratory.

In this process, hydrogen is passed at high pressure through powdered iron ore at perhaps 900F, producing metallic iron powder and water. Both of these products can be drawn off without interrupting the reaction. While it is basically another batch process—with which steelmaking has always been plagued too much—it can be operated as continuously as, say, a blast furnace.

• **Moderate Heat**—The HRI-Bethlehem cycle introduces heat from an external source in the circulating stream of hydrogen at low heat levels. The low heat level, in turn, means that the iron "fines" don't stick together—they stay suspended in the turbulent flow of gas.

The low heat level also means that not all hydrogen will be reacted to water on each pass through the reactor. Ordinarily, that would mean relatively little deoxidation of the ore on each pass, but boosting the hydrogen pressure to 400 lb. per sq. in. steps up the reaction rate. The high pressure also offers another advantage: The hydrogen can be dewatered more effectively and more cheaply for recycling than hydrogen recycled at atmospheric pressure.

• **Other Effects**—The H-Iron cycle retains one disadvantage that's common to most direct-reduction processes: It won't remove any contaminant except oxygen.

Ore that is high in silica and phosphorous, for example, will yield iron that is also high in these elements. So, depending on the quality of the original ore and the degree of beneficiation before or after reduction, H-Iron could require more refining in the steelmaking furnace than standard blast-furnace iron would require. Offsetting this, though, is the fact that the H-Iron cycle doesn't load the iron with carbon and sulfur as a blast furnace does.

Within broad limits, any specified amount of oxygen can be removed from the iron ore, so that different products could be turned out in a reducer. From good clean ore, for example, you could produce 95% metallic iron—a suitable material for electric furnaces. Or you could partially reduce dirtier ore and make, in effect, a mixture of metallic iron and open-hearth "charge ore" in the same package.

"Charge ore" is a vital ingredient for open hearth steelmaking, since it's a convenient way to get both metallics and oxygen (to remove carbon and other contaminating elements) into the steelmaking bath. But it is both scarce and expensive.

Then, too, the metallic iron portion of the package could reduce your dependence on purchased scrap. The proportions of metallic iron and charge ore in H-Iron can be adjusted at will, and an H-Iron reducer could fit into an existing integrated steel plant to guard against the perils of a scrap shortage or a scrap price runaway.

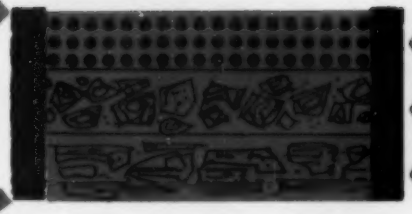
• **Out of the Lab**—No one imagines that the H-Iron cycle will make the blast furnace obsolete. Indeed, the major reason for the HRI-Bethlehem program is the possibility of fitting the reducer into an existing integrated steel plant.

The work at Trenton has been completed. HRI and Bethlehem are making detailed engineering studies for a large commercial plant.

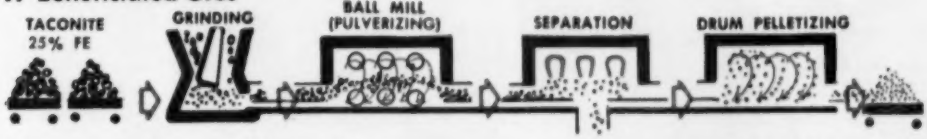
HRI points out that the economics of the H-Iron process depend on the

# Iron Output

**New Charge** — Using techniques described below, is less dense, but produces more iron.

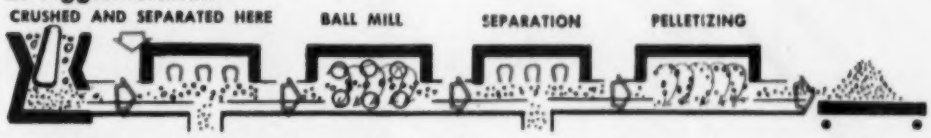



## 1. Beneficiated Ores



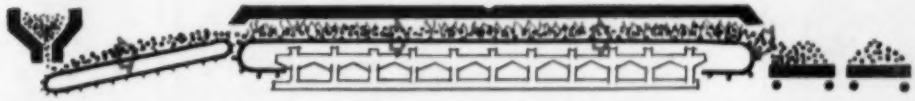

Concentrating low grade (25%-35% iron) ores into a richer product containing 60 to 65% iron yields more iron per ton of blast furnace burden than the 51%-iron content "direct shipping ores." Use of enriched ore lowers slag volume, can raise production rate 10% or more.

## 2. Agglomeration



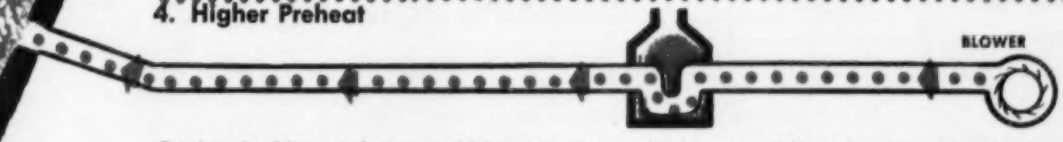

Techniques for combining small particles into larger sized pellets — a necessary part of ore beneficiation — makes for a better furnace charge. Larger ore size encourages an even, rapid flow of reducing gas through the furnace, also prevents loss of fine particles.

## 3. Sintering



Sintering — baking with fine coke — agglomerates ore into irregular but large sized pieces. These, like pellets, facilitate the flow of reducing gasses. Sintering is costly, but higher ore costs warrant the expense, since less ore is lost as stack fines and de-oxidation is improved.

## 4. Higher Preheat




Getting the blast air hotter could increase the production rate of blast furnaces. Blast furnace men hope that improvements in ore will make possible an increase of blast temperature from about 1,000F to 1,400F.

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The most exacting needs of today's precision industries are met by New Departure's complete line of miniature ball bearings, 3/8" (.375") outside diameter and smaller.

Made with extreme accuracy, these tiny steel "jewels" are assembled, torque-tested, and packed in pressurized, atmosphere-conditioned areas of surgical cleanliness, assuring unsurpassed performance and dependability.

For full information about miniature bearings, or for engineering help on your bearing problems, contact New Departure, Division of General Motors, Bristol, Conn.

GM GENERAL MOTORS

**NEW DEPARTURE BALL BEARINGS**

NOTHING ROLLS LIKE A BALL

***"...a new possibility: H-Iron reducers teamed up with electric furnaces..."***

IRON starts on p. 79

availability of cheap hydrogen. Using the Texaco HRI Partial Oxidation Process, which has already been licensed widely to the chemical industry, HRI says hydrogen can be produced cheaply from many fuels—liquid, solid, and gaseous. The cost of producing the hydrogen required per ton of metallic iron, HRI says, will be considerably less than the cost of metallurgical coke—the fuel and reducing agent of the blast furnace—required to make a ton of pig iron.

Now, because cheap hydrogen can be had from so wide a variety of fuels, you can locate an H-Iron reducer exactly where it will serve you best—at the ore mine, at the steel plant, at the fuel source.

Fluidized solids equipment has found wide use, too, in oil refineries. Comparison of this type of low-temperature equipment with blast furnaces and their associated coke ovens strongly suggests that the H-Iron process may offer significant savings in capital costs.

It looks as if a steel producer who is thinking about a wholly new steel plant may have another possibility to consider: H-Iron reducers plus electric furnaces.

## II. More Out of Ore

Steel's drive for improved technology extends also to the more prosaic field of ore beneficiation—with the prospect of more economy there than ever before.

For years, U.S. steelmakers have been hunting and developing new ore bodies to replace the dwindling supply of direct-shipping Great Lakes ore on which this country's steel economy has rested for half a century. Many of the discoveries have been ores whose iron content is too low for direct shipping and direct use in blast furnaces. Such ores are concentrated by various processes usually to an iron content of 60% to 65%. More of these ores are flowing into blast furnace stockyards, and their proportion will increase.

The iron content of the ore is important, of course. The higher it is, the more iron you can expect per hour from a blast furnace. You can gain either by finding a richer ore—and some of the postwar discoveries, notably those in Venezuela and Labrador, average about 60% iron—or by concentrating it further.

• **Sintering**—A real prospect of boosting the productivity of existing blast

So many things today use a *Dexstar Specialty Paper* in place of other material.

Perhaps *you* could, too — to make *your* products *better*, for *less*.

We'd be happy to discuss possibilities.

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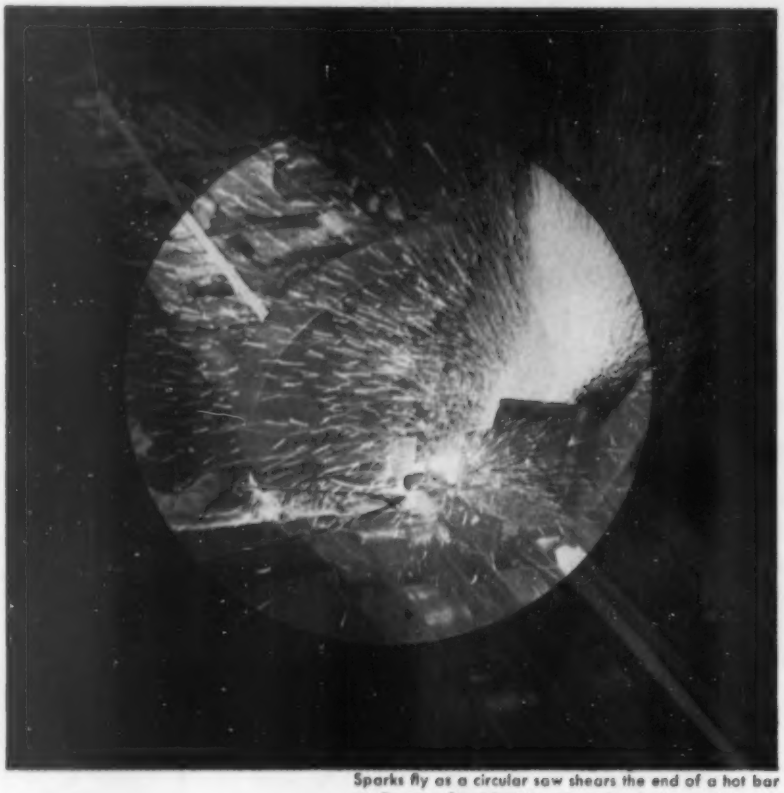
# How HKP serves industry



Sparks fly as a circular saw shears the end of a hot bar at Connors Steel Division plant, Birmingham, Alabama.

## Carbon steels —Alloy steels —Special steels —Tool steels

**Today's America uses over 117 million net tons of steel a year. A vital industrial segment of this huge production is made up of fine tool steels; steel reinforcing bars and merchant bars; structural angles and bulb tees; hot rolling strip; and special shapes in alloy, carbon, tool and stainless steel. These are products of three of the 13 divisions of H. K. Porter Company, Inc: Connors Steel in Birmingham, Disston in Philadelphia and Vulcan Crucible Steel in Aliquippa, Pa.**

**Believing in "growth through service," Porter constantly increases its divisions' ability to serve. At Connors alone over $2½ million for new equipment and plant modernization has been spent to expand and increase its steel service to industry.**

**As Porter divisions grow so does their service to industry.**

**H. K. PORTER COMPANY, INC.**

ALCOA BUILDING, PITTSBURGH, PA.

*Divisions of H. K. Porter Company, Inc.*

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***" . . . sintering fine ores can boost blast furnace capacity at lower coke rate . . . "***

IRON starts on p. 79

furnace is by sintering the fine ore. This is an old art, one form of improving the physical character of ore. It has made striking progress in the last several years but promises to be used even more widely.

An increasing amount of the ore that U.S. steelmakers receive these days is made up of "fines." In a blast furnace, these powdery particles tend to pack, creating a dense, impermeable layer that retards the deoxidation process by blocking the reducing gases.

If you screen out these fines and sinter them—bake them with a mixture of fine coke—you get large pieces of rather porous material. One expert says that every 10% of fine ore replaced by sinter in the furnace charge will reduce the coke rate—pounds of coke consumed per net ton of iron smelted—by 40 to 50 lb. Nationally, the coke rate averaged last year about 1,750 lb. per ton of iron. Operators strive constantly to lower it.

Here's what sintering can do:

Assume you have been charging 1,750,000 lb. of coke per day in a furnace that yields 1,000 tons of iron—that's a 1,750-lb. coke rate. Assume also that 40% of the iron ore charge has been fines. If you screen out those fines and sinter them before charging, the coke rate goes down to 1,570 lb. However, the furnace will still take 1,750,000 lb. of coke per day as its capacity, and at a coke rate of 1,570 lb. it will be yielding 1,150 tons of iron instead of 1,000 tons.

• **Hotter Air**—Still another prospect of boosting the output of existing blast furnaces is getting fresh attention these days. It lies in boosting the temperature of the blast air.

This is an old and obvious idea, of course, but as long as the direct-shipping Great Lakes ores furnished most of our iron it hasn't been usable. That's because these ores don't readily accept blast temperature much over 1,000F. Pushed beyond that heat, they tend to "hang" in the furnace, rather than move steadily and evenly down.

It hasn't been proved, but there are strong indications that higher temperatures can be used as beneficiated ores make up more and more of the average blast furnace burden. This, too, would help to reduce the coke rate and to give higher iron production.

The blast charge is preheated in stoves fired by blast furnace gas—and many plants can't use all the gas they

# toward Intercontinental TV

An important advance has been made in microwave radio! It's called "over-the-horizon" transmission.

Until recently, microwave was limited to line-of-sight distances, signals being beamed directly from one antenna right at another. However, engineers knew that a small part of the signal "drops off" the beam, or is "scattered" in the troposphere. A whole new concept was visualized, requiring new, specially-designed equipment.

Now, with the new technique, the signal is beamed far out over the horizon with tremendous power. Huge new "high-gain" antennas capture the "scatter," and a special IT&T electronic system keeps the signal steady for highly reliable communications.

Thus "over-the-horizon" transmission promises to span truly long distances... a big step toward the day when TV may cross the oceans. For telephone and telegraph, facsimile, and telemetering, great benefits can be made available today.

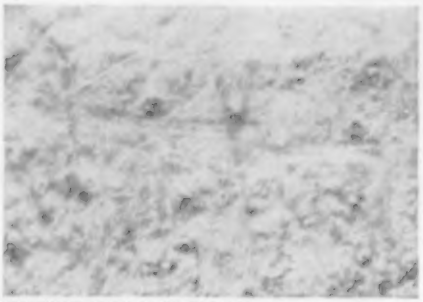
IT&T engineers were the first to introduce microwave communications, 25 years ago. And, by the development of unique equipment, they have made a major contribution toward making "over-the-horizon" microwave commercially practicable.

INTERNATIONAL TEL TEL

IT&T

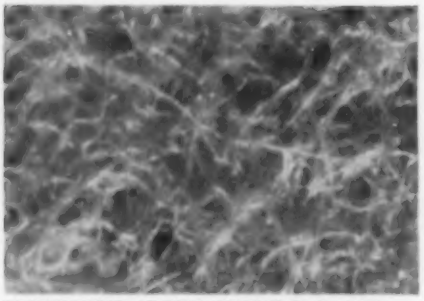
INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION, 67 Broad Street, New York 4, N. Y.

# How a paper machine turns



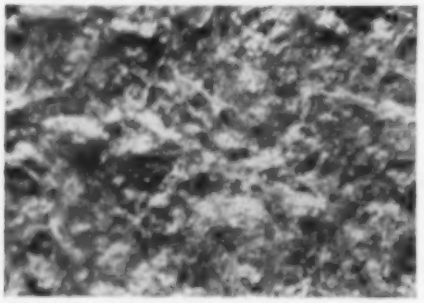
PHOTOMICROGRAPH OF NEWSPRINT

**Conventional paper**—like that used in your newspaper, for example—is made of millions of short cellulose fibers matted closely together. Fine printing and writing papers are made by adding clay and other fillers to the mixture while the paper is in the watery pulp stage of manufacture.



PHOTOMICROGRAPH OF RESIN-SATURATED FILTER PAPER

**Resin-saturated material** designed for filtering oil is composed of short cellulose fibers that appear to lie across each other like matchsticks. Fibers are coated with a thin coat of resin which stiffens them and helps maintain proper fiber spacing. This allows maximum flow of the fluid to be filtered, yet traps a maximum of dirt particles.



PHOTOMICROGRAPH OF RUBBER-SATURATED GASKET MATERIAL

**Rubber-saturated materials** which are intended for use as gasketing are designed to be impervious. The fiber structure is somewhat tighter than that used for filter material, and finely ground cork is added to the mix. A patented beater-saturation process coats both fibers and cork with a uniform layer of rubber that blocks the passage of gases and liquids.

As it enters the machine, paper is 99% water and 1% wood pulp. In the special Armstrong materials, this 1% can include rubber latex, synthetic resins, and finely ground cork.

The mixture moves in regulated amounts from the "head box" (A) onto a moving wire screen called a Fourdrinier wire (B). Much of the water drains through the screen.

# fiber, rubber, and resin into new industrial materials

For over 150 years, paper-making machines have been fed a standard diet of water and wood pulp. But today, in the Armstrong Research and Development Center, chemists feed a scaled-down paper machine such things as rubber latex, ground cork, and synthetic resins. As a result, amazing new materials have come forth . . . materials you'd never suspect came off a paper machine.

For example, Armstrong chemists developed a sheet of material so tough a man can't tear it—and so impervious it will seal hot oil under pressure. They made this material by feeding cellulose fiber, rubber, and cork into their paper machine. This wasn't easy for it took a good deal of chemical and mechanical ingenuity to perfect a process (now patented) that would coat each tiny fiber and cork particle with a uniform layer of synthetic rubber—while they were suspended in water.

Once this trick was accomplished, the mix was sent through the paper machine . . . which turned out a highly compressible gasket material that held its dimensions, resisted crushing, and offered an effective barrier to most gases and fluids.

Then, after making a material that stopped oil, the Armstrong chemists used their paper machine to develop one that would pass oil. This time, they were aiming for an oil filter element—and the problem now was to keep the fibers apart far enough to pass oil yet close enough to trap dirt particles.

From previous experience, these research men knew that resin-saturated fibers would do the job. But finding the correct fiber length, making sure the fibers wouldn't mat too tightly on the paper machine, determining the proper amount and kind of resin, all this took months of experimentation. Ultimately, though, the right combination of ingredients and processing method was found . . . and the result was an efficient paper for all kinds of oil filter cartridges.

Today, the Armstrong paper-mill-in-a-lab is learning still more new tricks. Like a modern-day Aladdin's Lamp, this giant research tool is helping to develop a variety of highly useful industrial materials.

**Armstrong fiber sheet materials** range from soft, vibration-damping felts that quiet noise in household appliances . . . to resilient gaskets that seal oil in heavy tractors. Armstrong makes a complete line of filter felts and artificial leather bases, too. Perhaps one of these materials can help in your business. For booklets on specific products, just write and tell us what you're interested in. Armstrong Cork Company, Industrial Division, 8203 Indian Road, Lancaster, Pennsylvania.

Armstrong Industrial Products

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CORK COMPOSITION
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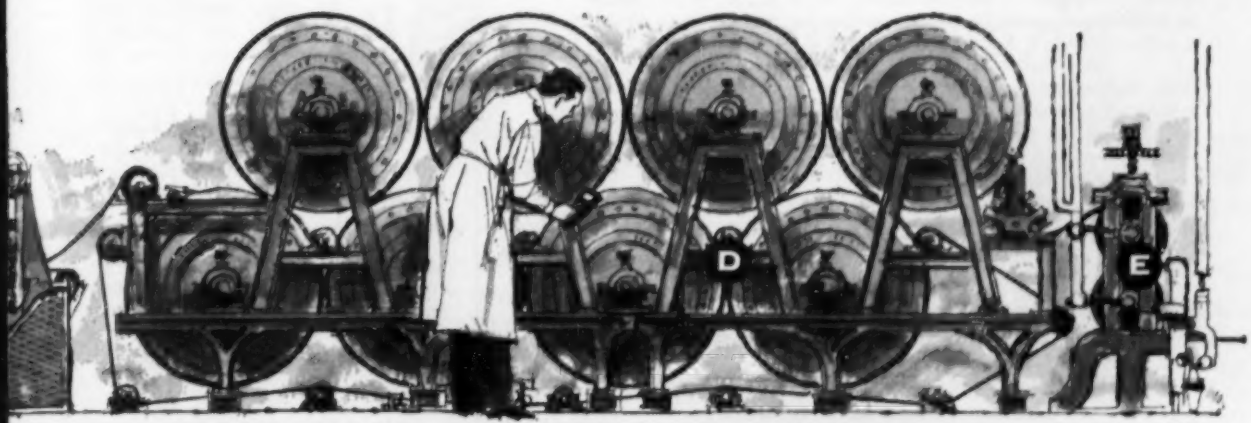
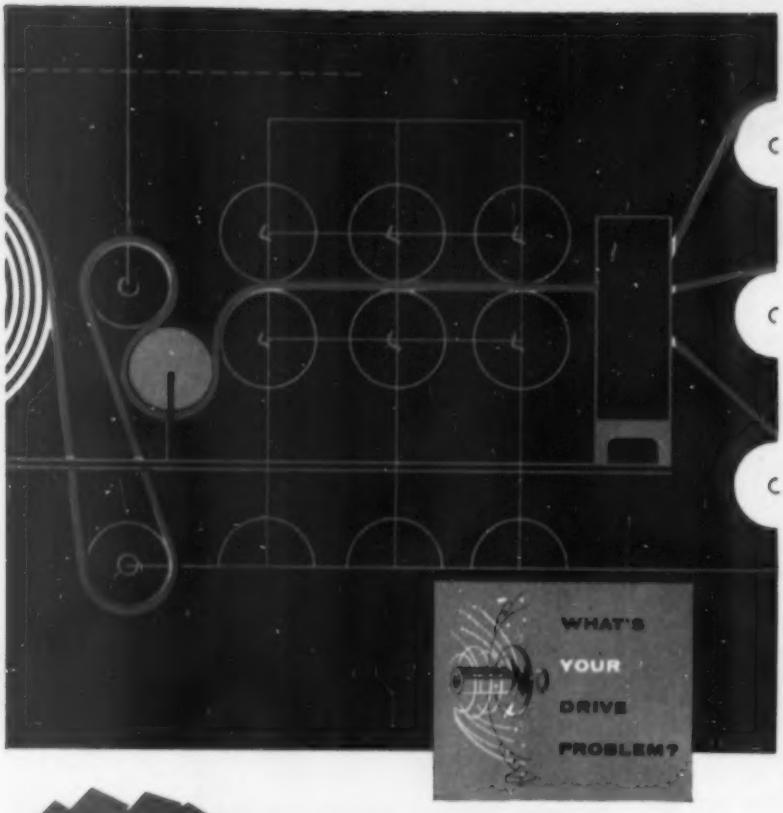



Paper begins to form as the fibers mat on the wire. More water is removed by suction boxes and pressure rolls (C). The sheet is now strong enough to move without support.

Heated dryer drums (D) remove nearly all remaining moisture, and the paper finally moves through calender rolls (E) which control its caliper and give it a smooth surface.




RELIANCE V★S DRIVE®

**SHAVES PRODUCTION COST OF RAZOR BLADE ENVELOPES 35%**

Forty-five million razor blade envelopes are printed, die-cut, slit and rewound each month with an estimated savings of 35%.

*Reliance V★S Drives are the major factor in this remarkable installation.*

Power is supplied from one central 20 hp. drive. Web tension is controlled by the variable speed drive under regulation of a dancer-roll.

This representative Reliance V★S Drive installation, solving a difficult operating application, provides infinite adjustment of wide range, variable speed; jogging; creeping; smooth acceleration and deceleration; and dynamic braking. What's *your* drive problem?

*Write for Bulletin D-2311.* D-1516-A

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Canadian Division: Welland, Ontario

make. You have to put a certain amount of Btu.'s into the stock to smelt a given amount of iron—the more you can get from a hotter blast, the better off you are. Blast furnace gas is a byproduct; metallurgical coke costs $13 to $20 a ton.

• **Tailored Ore**—The trend toward concentrated, carefully sized ores may also mean that blast furnace operators will be less dependent on the highest quality coke.

For years, operators have insisted on very hard, lumpy coke. They needed it for two reasons:

• It had to be strong enough to support the heavy weight of iron and limestone in the stack.

• It had to be lumpy to allow hot gases to pass easily upward through the burden.

These requirements forced coke-makers to seek out the best possible metallurgical coal. The supply of this coal has been getting tight, and the price has risen faster than that of other coals.

Steelmakers have been experimenting with blends of the high-grade coals with lesser coals, to stretch out the supply of good coking coal.

As larger-sized concentrates of ore are more widely used, demand for the best coke will be less urgent. The ore itself will form permeable layers in the blast furnace. That will help the furnace operator both in stretching his coke supply and in keeping down his costs.

## Cheaper Styrene Seen In New Cosden Process

Word that Cosden Petroleum Corp., Big Spring, Tex. has a new process for the recovery of ethyl benzene directly from petroleum stocks has the plastics industry buzzing this week.

Cosden's new process, which will be used at a $3-million plant now being built at Big Spring, will eliminate a costly and troublesome step in the production of styrene—a major plastic raw material.

The key to the process, still a secret, lies in how Cosden recovers its ethyl benzene directly from petroleum through a technique known as "ultra fractionation."

Usually, in the production of styrene, petroleum is broken down into its separate hydrocarbons. This produces benzene and ethylene. Thereafter benzene and ethylene are chemically combined to form ethyl benzene, which in turn is dehydrogenated to form styrene.

By skipping a step in its 20-million lb.-a-year styrene plant, Cosden figures that it will be able to lower the price of raw styrene. END

# 6 OUT OF 10 ARE GRANODIZED

Six out of 10 cars in this lot at Standard Pressed Steel, Jenkintown, Penna., are Granodized with Granodine® before painting. Why do most automobile manufacturers use this crystalline zinc phosphate undercoating? The reasons are simple. Granodine provides a lasting bond between paint and steel. It forms an inert barrier against rust. It assures a fine and durable paint finish.

Automobile manufacturers depend upon Granodizing with Granodine, too, because of the technical assistance offered by ACP. Not only do we supply the chemicals — we also put them to work and, what's more, keep them working effectively.

Your sheet steel products also can have these extra sales features. Investigate the advantages of Granodizing with Granodine. Contact your nearest ACP sales office or write us.

**AMERICAN CHEMICAL PAINT COMPANY, Ambler 37, Pa.**

DETROIT, MICHIGAN NILES, CALIFORNIA WINDSOR, ONTARIO

CHEMICALS ACP PROCESSES

# WHO IS TELLING YOUR SALES STORY TO RODOLFO BARRAGAN?

**There's another question to answer, too — why should you be interested in Señor Barragán?**

**Barragan is sub-director and plant manager of Mexico's largest steel mill — Cia. Fundidora de Fierro y Acero de Monterrey. This job makes him an important buying influence for many companies who sell overseas.**

**Like operating management men in manufacturing and power plants all over Latin America, Señor Barragán is avidly searching for new methods, new equipment, that will help boost output and cut costs.**

**One magazine devotes *its whole editorial operation* to serving Latin American operating management—that magazine is INDUSTRIA. And it does that job so well that more of these men pay to read INDUSTRIA than any other U.S. industrial export magazine!**

**So if you're advertising regularly in INDUSTRIA'S pages, INDUSTRIA is telling your sales story to Señor Barragán — and to thousands of operating management men like him.**

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# New Transistor

**High frequency unit being produced by Texas Instruments threatens to invade stronghold of vacuum tube.**

Transistors, the tricky pea-sized semiconductor devices that perform electrical valving actions similar to vacuum tubes, have a string of successes to their credit. They've elbowed competing devices aside to take over 95% of the hearing aid field. More recently, they've jumped into portable radios.

But vacuum tubes have gone virtually uncontested in the fields of television, civilian and military shortwave communications, and electronic devices. That's because this kind of equipment requires components that react to current and voltage variations occurring up to hundreds of millions of times per second—in the hundred megacycle range. Even the best production transistors made last year ran into trouble at 25 megacycles.

• **Big Leap**—Now transistors seem ready to make a flying leap into the higher frequencies. Texas Instruments Inc., Dallas, last week revealed that it has in production a transistor that can handle 250 megacycles for amplification and can generate radio frequencies as high as 400 megacycles.

• **New Technique**—Texas Instruments' high frequency unit is a germanium transistor utilizing a production technique known as grown-diffused junction. Transistors made this way have a thinner boundary layer of impurities in the germanium crystal and this enables them to react faster.

The new technique is also being used by Texas Instruments for transistors made of silicon. This makes possible an eightfold increase in the frequency range of silicon transistors, bringing them up to 30 megacycles.

• **Competitive Edge**—Its pioneering efforts in the higher frequencies puts Texas Instruments in the position of sole supplier of transistors suitable for amplification strips in radar sets, television receivers, and other very high frequency communications equipment. This is not the first scoop for the company. It got a two-year jump on other companies in the production of silicon transistors, and was instrumental in developing the first transistorized portable radio.

• **Cost**—The new high frequency transistors are expensive, running to $34 each for silicon and $20 for the germanium types. But as production goes up, prices will come down. Regular transistors that cost $8 to $10 in 1954 are only about $1.50 today. END

*From production line to neighborhood delivery—International Harvester's multi-stop delivery truck with a Metro-Lite body offers many advantages.*

# "MADE WITH MAGNESIUM!"

**International Harvester chooses magnesium for Metro-Lite delivery bodies to gain ruggedness and light weight.**

Easier to build . . . easier to sell. These are the general reasons why International Harvester's subsidiary, The Metropolitan Body Company, has added its name to the growing list of major companies who have chosen magnesium.

*But let's look at the specific reasons:* Trucks utilizing magnesium and other lightweight materials are easier to build and sell. Weight reduction is one reason, ruggedness is another. New simplified body construction is yet another. Light weight means easier fabricating and lower production costs for the manufacturer. The trucker, too, benefits from more payload and lower operating costs. Extra strength and ruggedness, coupled with thick-sheet construction, eliminate the need for interior frame posts and protective lining. This adds 15% more capacity to a ten-foot body!

*Join the many manufacturers* who are improving their products —and sales possibilities—with magnesium. Contact your nearest Dow sales office or THE DOW CHEMICAL COMPANY, Magnesium Sales Department MA 351A, Midland, Michigan.

*you can depend on DOW MAGNESIUM* DOW

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FLUSH LATCHES

*Put you Ahead of Competition*

Illustrated is a typical example of **Hotpoint*** product improvement, efficiency and simplification with HARTWELL *Flush Latches.*

Improve product quality . . . cut production costs . . . increase utility and sales appeal . . . eliminate user or production "headaches." Forecast future trends in terms of forward-looking product design and development as **Hotpoint** has.

If you want competitive advantages, better investigate the design, cost saving opportunities offered by HARTWELL *Flush Latches.*

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KNITTED METAL fabrics, formerly pot scourers, are turning up in industrial roles.

# A Cinderella Steps Out

From their lowly life beside the kitchen sink, knitted metal fabrics are climbing these days to a series of sparkling new roles in industry. Time was when nobody used them for anything but scrubbing greasy pots and pans. Today, they're blossoming out in the electronics, automotive, chemical, and plastic fabricating industries.

They're turning up as airfilters in trucks and tractors; as separators for immiscible liquids, like varying grades of oils; as gaskets, shockproof mountings, and plastic seal reinforcers; and in delicate vacuum tubes.

• **Kin to Summer Screens**—Knitted metal fabrics are only distant kin of woven metal meshes. Mesh has a symmetrical pattern, simply because that's the pattern that the weaving process produces.

But knitted metals have an asymmetrical pattern because they're formed by the interlocking of loops of wire. They are knitted on machines similar to those that the textile industry uses to knit stockings.

This form of construction gives the knitted metal fabrics great flexibility. Each loop in the fabric acts as a small spring. In this form, the metal fabric maintains its resiliency over a wide range of temperatures—from −90F to 1,000F. And its flexibility compensates for thermal expansions and contractions.

Metal knitting machines can turn out a variety of fabrics from different metals and wire thicknesses. Depending on what characteristics manufacturers want in the fabrics—such as high tensile strength, or resistance to corrosion—they can be made from copper, aluminum, stainless steel, tungsten, and a variety of alloys.

• **Climbing Sales**—The metal fabrics' climb out of the kitchen has meant a rapid rise in business for the few companies that make them. The biggest of the less-than-half-a-dozen outfits in the field, Metal Textile Corp., Roselle, N. J., the developer of the metal knitting process, has seen its sales grow from $3-million in 1951 to $5-million today—largely as a result of new applications for its product.

Among those new applications:

• In electronics, knitted wire is partly replacing metal shielding in miniature vacuum tubes. It conducts heat away

# FOAMGLAS®

*the cellular, stay-dry insulation*

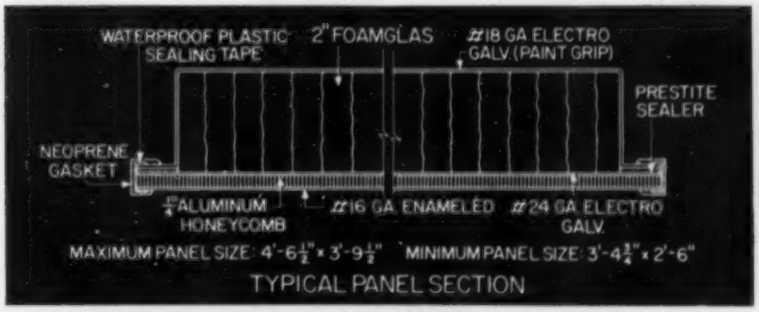
## FOAMGLAS-porcelain panels give FORD durable curtain walls with constant insulating value

As up-to-the-minute as the Ford family of fine cars . . . the Ford Motor Company's new $30,000,000 Central Staff Office Building at Dearborn, Michigan, demonstrates the functional simplicity of design possible with curtain wall construction. An integral feature of the 6,616 prefabricated porcelain enamel curtain-wall panels is the 2" insulating core of FOAMGLAS to provide vital structural and thermal benefits.

Since FOAMGLAS is impervious to moisture, insulating value remains unchanged under all weather conditions. Ford can count on a constant U-factor of 0.15 for the finished panels. What's more, FOAMGLAS is completely inorganic, dimensionally stable and will not deteriorate in service. It's fireproof, too, for extra building safety.

With a compressive strength of over 7 tons per sq. ft., FOAMGLAS withstood all laminating pressures required to make each panel a sound structural unit. Its light yet rigid structure helped strengthen the finished units while weight was held to just 7½ lbs. per sq. ft.

Each panel unit was inserted in a preformed rabbet in the building's aluminum grid frame. An aluminum stop moulding was then screwed into the frame and topped with a cover moulding. Panels were installed at the rate of 4 per hour for a final erected cost of only $4.25 per sq. ft.




TYPICAL PANEL SECTION

Architects: Skidmore, Owings & Merrill, A. I. A., New York, N.Y.
Consulting Engineers: Jaros, Baum & Bolles, Inc., New York, N. Y.
General Contractor: Bryant & Detwiler Co., Detroit, Mich.
Panel Manufacturer: Ingram-Richardson Mfg. Co., Beaver Falls, Pa.

Ford also took full advantage of the outstanding insulating performance of FOAMGLAS by using it to insulate all roof areas and exterior columns in the new building. Whatever your own insulating problems, it will pay you to send today for detailed literature on the use of cellular, stay-dry FOAMGLAS . . . the strong inorganic insulation for panels, roofs, ceilings, walls, floors, piping or equipment. Write us, specifying your insulating problems. Address:

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# How Industry Found a Way

- TO SPOT INVISIBLE DEFECTS IN PRECISION CASTINGS
- TO IMPROVE ON AN ORIGINAL . . . WITH A COPY
- TO MAKE GOOD PRINTS FROM POOR NEGATIVES

• PRECISE QUALITY CONTROL is becoming increasingly important in the manufacture of a wide range of products. And more and more industries are turning to x-ray inspection to find hidden flaws. The Arwood Precision Casting Corporation of Brooklyn, New York, for example, makes a variety of close tolerance parts. These parts include precision castings for jet engines and guided missiles, in which even the most minute hidden flaws can be dangerous and costly.

To spot these flaws, Arwood relies on Du Pont Industrial X-ray Film for x-ray inspection of large production runs. They've found that the fine grain of Du Pont X-ray Film enables them to spot defects in castings made to tolerances of as little as .005 inches.

This application is typical of the important quality-control jobs Du Pont X-ray Film is used on every day in the inspection of products ranging from jet engines to sewing machines. If you would like to have more information about Du Pont Industrial X-ray Films, Screens and Chemicals, fill out the coupon below.

• EVER NEED a *clean* copy of a faded, worn blueprint, drawing or map? Here's an economical solution to your problem. Du Pont has developed a tough paper coated with a photographic emulsion. It's called Litho T and it makes an ideal intermediate for the reproduction of plans, drawings or blueprints. When used as a transparent master, you'll find that it makes a precise duplicate of original fine lines.

Litho T will help you to speed production, too. Its high speed enables you to make an exposure in a camera as easily as in a printing frame. You can process Litho T in only a few minutes. It dries quickly and lies flat. Du Pont Litho T is handy, too, for multilith or offset work, especially with rush jobs where speed and cost are vital.

If you'd like to have more details about Du Pont Litho T photographic paper, just mail the coupon below for a free booklet.

• HOW DO YOU MAKE good industrial photographs from negatives of varying quality? That problem's tough enough for any photographer, but the modern industrial photographer has an even tougher one. His job runs from printing identification pictures by the hundreds to the production of top-quality publicity "stills" or huge blowups for exhibits.

One way to correct over- and under-exposed negatives is to use 4 or 5 different contrast grades of photographic paper. But today—thanks to "Varigam," a product of Du Pont research—the modern industrial photographer needs only *one* paper to do the job. For each sheet of "Varigam" can provide 10 separate grades of contrast through a simple change of filters in the enlarger.

Today, major industrial concerns in every field are using "Varigam" variable contrast photographic paper. Time after time they've proved that "Varigam" cuts storage and inventory costs by 60 to 70%—and consistently gives uniform, quality prints as well.

How can "Varigam" help you? If you'd like to know more about this important product, write for our new booklet, "Applications of Variable Contrast Papers in Industry." No obligation, of course.

**DU PONT PHOTOGRAPHIC PRODUCTS**

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BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

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from the tubes, and protects them from shock.

• In the chemical industry, metal textile pads are being used in mist climinators that filter liquids from gases. The pads are made from layers of knitted metal, and have wire surface areas of 100 sq. ft. per cu. ft. of material. This material will allow gases to pass through, but it will stop the passage of any liquids.

• In mechanical systems that are subject to wide temperature variations, washers made of compressed knitted metal are used as cushioners, expansion joints, and as vibration absorbing mounts.

• In plastic fabricating, the metal fabrics can be combined with plastic materials to give extra strength to fluid pressure seals.

The corrosion resistance of the metals that are made into knitted structures makes them useful for cushioning where the presence of corrosive agents prohibits use of other materials.

However, the knitted metals cannot be used in components that require openings of exact sizes or meshes with rigid structures.

## Russian Kerosene Radio

This all-wave radio, powered by a kerosene lamp, is being exhibited by the Russians at the Leipzig Fair in East Germany. Already in wide use on Soviet collective farms, the receiver has possibilities in underdeveloped countries whose rural areas are without electricity.

The receiver's thermal generator contains a series of thermocouples packed in asbestos. The flame of the kerosene lamp heats the generator to 572F internally, while radiating fins cool it to 86F. The difference in temperature creates an electric current. The power generated is 3 watts, enough to light the low-current filaments and to operate the radio.

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## ...in fine food

Whether you prefer dining in an attractive dining room or in your own guest room, at a banquet or a reception, Hilton Hotels offer a wide selection of tempting dishes superbly prepared by world-renowned chefs. You are also sure to enjoy the thoughtful service and friendly atmosphere of the dining facilities in each of the twenty-eight Hilton Hotels at home and abroad.

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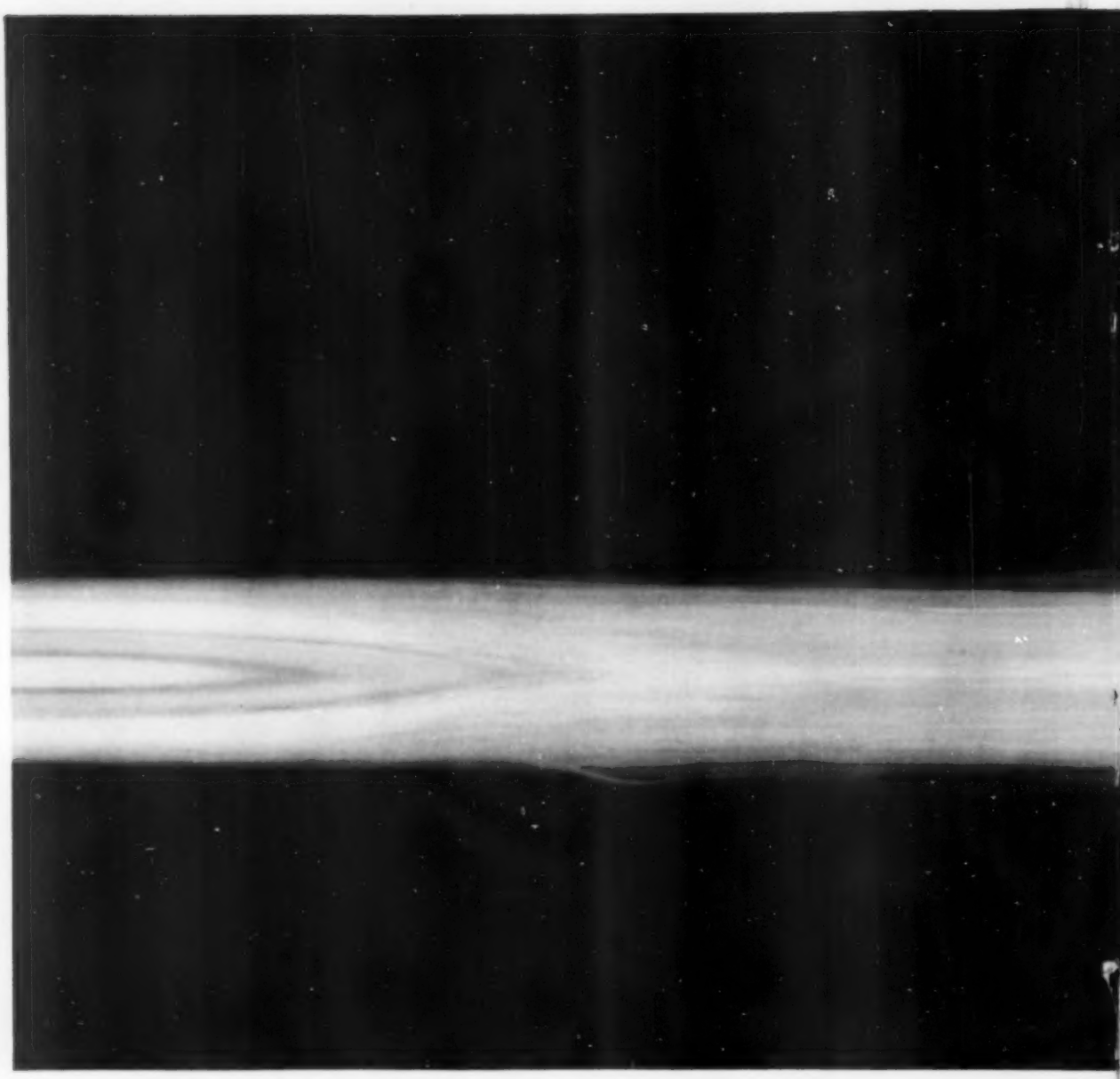


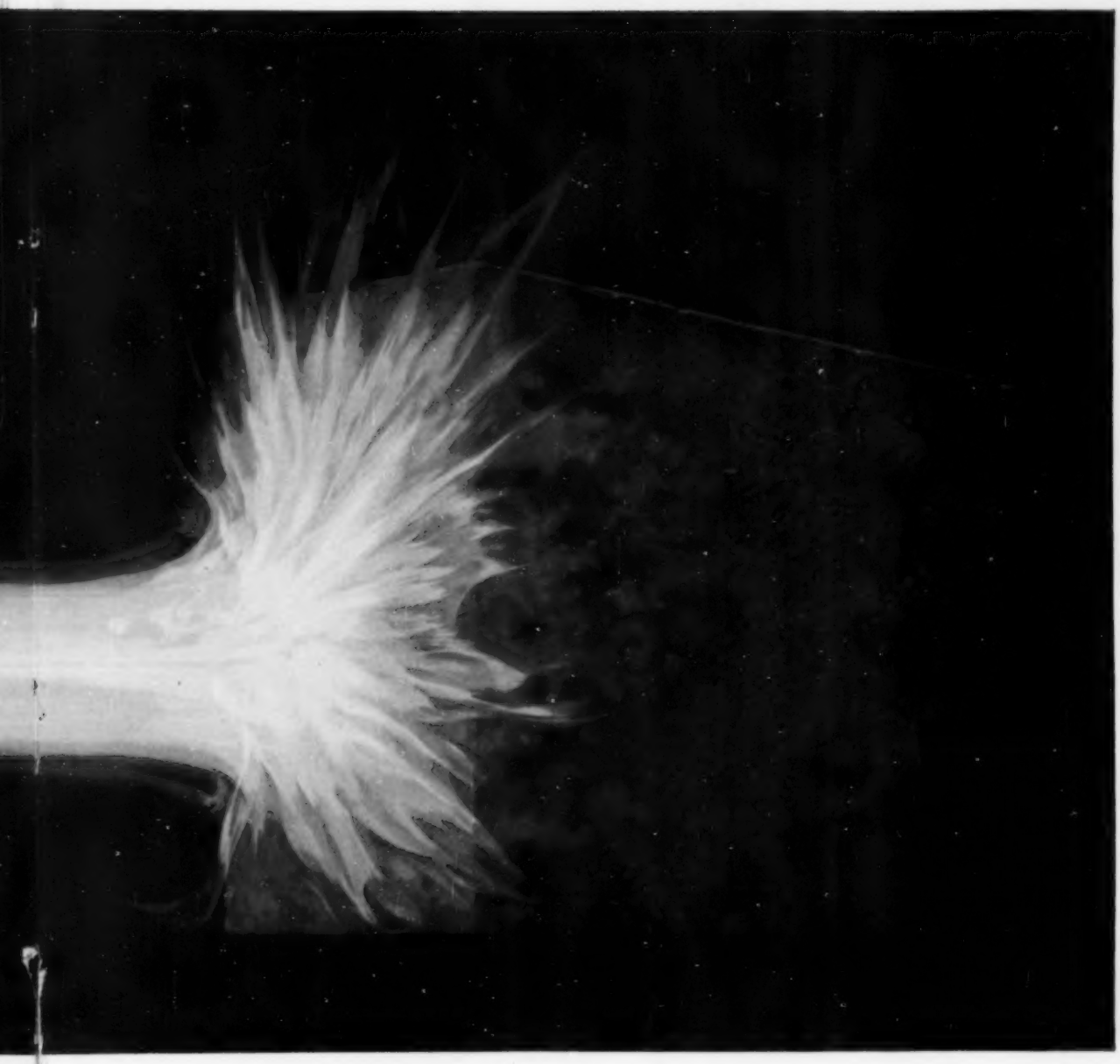
# *If heat is your business*

**High temperature refractories,** such as the brick above, made by Kaiser Chemicals Division for industrial furnaces, give *exceptional* resistance to the destructive effect of furnace atmosphere, heat and chemical attack.

This exceptional resistance is possible because each Kaiser Chemicals refractory is *designed especially* for a specific application.

Among the most outstanding developments of Kaiser Chemicals are: superior basic brick and bottom materials for steel-making furnaces, a unique basic checker brick for glass furnaces, and a top-performance brick for hot zone linings in rotary cement kilns. These refractory developments have helped many companies set production records at lower production cost.

The products offered by Kaiser Chemicals are the results of a continuous research program, both fundamental and applied. This research assures our customers superior refractories now and in the future.



# *think of* **Kaiser Chemicals**

The combination of specialized products and specialized service is an important reason why Kaiser Chemicals is a major supplier of refractories to industry . . . with the most complete line of basic refractories available today.

If there's a high temperature problem in your plant we'll be glad to work with you. Call or write Kaiser Chemicals Division, Kaiser Aluminum & Chemical Sales, Inc. *Regional Sales Offices:* 1924 Broadway, Oakland 12, Calif. . . . 3 Gateway Center, Pittsburgh, Pa. . . . 518 Calumet Bldg., 5231 Hohman Avenue, Hammond, Ind. (Chicago).

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Gone is the "dead" feel, the "touchy" temperament of so many electric typewriters. Smith-Corona engineers have succeeded in breathing life into the electric. How? By cushioning the keybars so that they give — ever so gently — even if you thud the keys. Note, too, that both keyboard and keytops are scientifically slanted to fit the natural movement of the fingers for easy, effortless touch . . . with no steps to climb. The result is a "Live Action" Touch. That's just one of the reasons it's easier — much easier — to type on a Smith-Corona, the world's fastest electric typewriter. Phone today for a revealing ten-minute demonstration.

# Smith-Corona ELECTRIC

**Smith-Corona Inc** Syracuse 1 N Y Branch Offices or Full Line Dealers in All Principal Cities

## PRODUCTION BRIEFS

**Modernization of three freight yards**—at Buffalo, N. Y.; Youngstown, Ohio; and Elkhart, Ind.—is planned by New York Central RR. Cost will run to more than $25-million. A $10,559,000 electronically controlled classification yard at Buffalo is expected to pay for itself within two years.

•

**Missile contracts** for turning out top priority Intercontinental Ballistic Missiles are held by Convair Div. of General Dynamics and Glenn L. Martin, the Air Force has revealed. The "Atlas" ICBM is being developed by Convair and the "Titan" by Martin. The ICBMs are rocket-powered missiles that are capable of carrying atomic warheads and can fly in the stratosphere with ranges of 5,000 miles.

•

**Method for recording TV programs** on magnetic tape that permits rebroadcasting over standard commercial broadcast facilities has been announced by RCA. The tapes can record over 15 minutes of programming and can be reused several times. The speed of the magnetic tape system is regulated during playback so that the television picture will not jump perceptibly on the viewing screen.

•

**Orders for 79 diesel locomotives,** totaling $16.5-million, have been placed by Pennsylvania RR. General Motors' Electro-Motive Div. will build 55; Alco Products, 15; and Fairbanks, Morse, 9. The locomotive will be used for freight switching and helper service. Deliveries start in June.

•

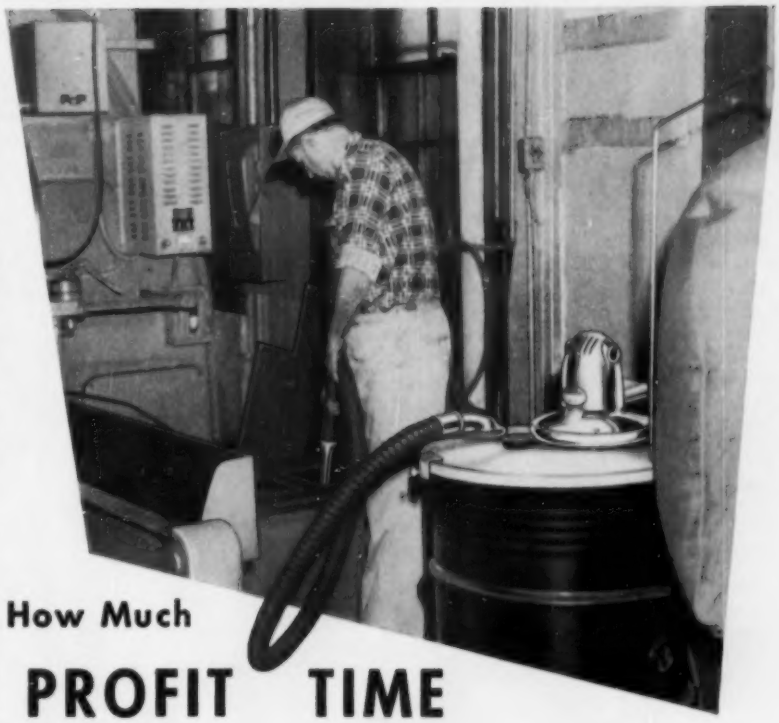
**AiResearch Mfg. Co.** will develop all air conditioning, cabin pressurization, and engine starting equipment for the $100-million fleet of Electra airliners that Eastern Airlines has ordered from Lockheed.

•

**An ethylene oxide plant** costing $8-million will be built by General Aniline & Film Corp. in Linden, N. J. The ethylene oxide will be used primarily in the production of detergents. The plant, which will have a capacity of 60-million lb. a year, also will produce ethylene glycols used in antifreeze and as plasticizers for cellophane and phenolic resins.

•

**Orders for six "F-1 Safaris,"** the plane designed by Frye Corp. as one of the "DC-3 replacements" for short haul operations from unimproved landing fields, have been placed by Northern Consolidated Airlines, Anchorage, and Wien Alaska Airlines, Fairbanks. The plane can transport cargo economically over short distances.

How Much

**PROFIT TIME**

**is sump cleaning costing you?**

*Vascoloy-Ramet Corporation saves 2½ hours "PROFIT TIME" for each machine by using a*

**TORNADO.** *JUMBO VACUUM CLEANER to clean out sumps.*

Stop for a moment! How many machines using coolants do you have in your plant? Multiply that figure by the time required to remove cutting oil and sludge from each sump. The figure will shock you. That's "PROFIT TIME" lost, never to be regained.

The Vascoloy-Ramet Corp., of Waukegan, Ill., a leading manufacturer of cemented carbides and Tantung cutting tools, have solved their sump cleaning problem with a *Tornado* JUMBO *VACUUM Cleaner.*

Previously, this messy job required 4 hours per machine. Now it takes only 1½ hours—a saving of 2½ hours of "PROFIT TIME" per machine. (Cleaning time varies with other types of Production machines, but time saved remains proportionately the same.)

The Tornado JUMBO can increase your "PROFIT TIME" too!

Oil, water, chips and sludge are easy prey for the powerful suction of the Tornado JUMBO (325 m.p.h. suction speeds) which rapidly deposits these materials in *any standard* 55 gallon drum. When one drum is filled the Tornado JUMBO conversion can be moved quickly from drum to drum increasing again the "PROFIT TIME" you save with a Tornado JUMBO.

Tornado JUMBO conversion units fit all standard 55 gallon drums and cost no more than regular size industrial cleaners. Start increasing your "PROFIT TIME" Today!

*Tornado manufactures a complete line of industrial cleaning equipment that can save you production time and maintenance cost.*

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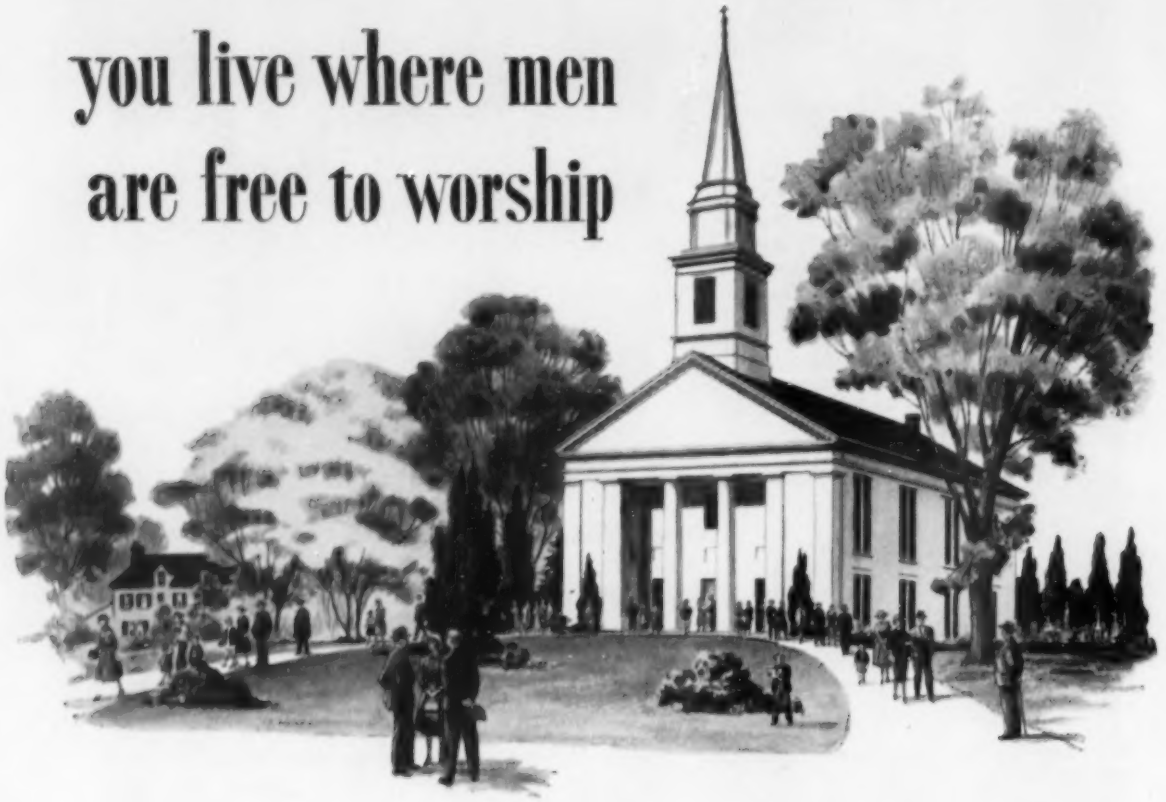
BE GLAD YOU'RE AN AMERICAN...

# you live where men are free to worship



As a citizen of the United States, you probably take religious freedom as much for granted as you do the air you breathe. That's understandable: the churches have always been open to you . . . as a child you learned that this nation was founded by men and women seeking religious freedom . . . that the Constitution gives every man the right to worship as he chooses . . . that Washington prayed at Valley Forge . . . that Lincoln said, "I ask the prayers of God's people" . . . and that even the coins you jingled in your pocket proclaim for this nation, "In God We Trust."

Be glad you live in the United States, rather than in some other lands whose leaders attempt to lock religion out . . . lands whose people have been persecuted, tortured, even murdered for their religious beliefs.

Napoleon said: "*. . . religion must be under the control of the government.*"

Mussolini said: "*Religion is a species of mental disease.*"

Hitler said: "*The State can only wish to extend its protection to such religious organizations as can in turn be of use to it.*"

Stalin said: "*We guarantee the right of every citizen to combat by argument, propaganda and agitation any and all religion.*"

These men forgot that this is the Creator's world. They ignored the question put to Job: "Where wast thou when I laid the foundation of the earth?"

Be glad you're an American. Be glad our leaders are humble and devout in their knowledge that this is God's world, and that we are His people. *Be glad you live where you are free to worship Him as your heart desires.*

*Norfolk and Western Railway*

**POLISHING** diamonds becomes an automatic operation with this new machine. Unskilled workers can be trained to operate it in a short time.

# Shaping Diamonds Faster

The skilled craftsman who has spent long years learning the intricate job of splitting diamonds with a hammer and a chisel may soon have to make room for the semi-skilled worker who can do the job faster with a few small machines.

New cutting and polishing machines (pictures) have been developed at Diamond Research Laboratory in Johannesburg, South Africa, that should bring big savings in time and materials to toolmakers and other diamond users.

**CUTTING** machine rig reduces chance for error.

• **New System**—The machines have been designed primarily for industrial diamonds, but can be modified for some gem stone work as well. One holds the diamond in an adjustable rig so that the cutting job is semi-automatic. The other is an automatic mill for grinding and polishing. The workman can check the operation of the mill with a toolmaker's microscope. He adjusts the grinding action by setting several micrometers.

An English company, Asquith & Co., will manufacture the machines, but no delivery dates have been set. The complete system probably will cost between $4,000 and $5,000.

• **Short Training Period**—Dr. J. F. H. Custers, who directed the research on the system, estimates that you can teach an unskilled workman to prepare cutting tools from rough stones in four to six weeks. The worker also gets an intensive course in the crystal structure and peculiarities of diamonds. Today's skilled diamond cutters earn about $200 a week or more, and even the best are sometimes guilty of errors in judgment or slips of the hand.

Unless a manufacturer has enough work to keep the high-priced skilled cutters busy most of the time, it isn't worth his while to maintain diamond cutting facilities of his own. The new system may enable small users to do their own cutting and finishing.

• **Saving on Diamonds**—And the machines should bring about a change in the buying habits of toolmakers. The usual practice is to buy rough stones as close as possible to the shapes and sizes needed. That way finishing costs are held to a minimum. But most diamonds are sold in lot "packages." So to get the size stones he wants, the manufacturer has to pay a premium—sometimes as high as 30%. With the new system a manufacturer doesn't have to be so fussy about size, can buy stones in package lots and cut the roughs up into usable pieces.

## NEW PRODUCTS BRIEFS

**TV scenes can be frozen** as still pictures with the use of a new tube, Tonotron, mounted next to a conventional picture tube. By flicking a switch, you can hold a picture indefinitely, then erase it instantly—while the program you are watching continues on the regular screen. Applications include military fire control, closed circuit industrial training or sales programs. Tonotron is made by Hughes Aircraft Co., Culver City, Calif., costs $1,025.

•

**A new detector for spotting pinholes,** made by Linderman Engineering Co., Washington, D. C., inspects sheetmetal strips at a rate of 1,100 ft. per minute. As the metal passes under a high frequency ultraviolet source, light that leaks through any vertical or angular pinholes registers on photoelectric cells underneath. The machine can detect holes down to .0003 in. in diameter. Every 15 minutes, an automatic self tester checks the unit's sensitivity. Price, $8,900.

•

**Ram truck coil attachment** that can pick up steel coils in either vertical or horizontal position and rotate them to the opposite position for stacking, is being made by Automatic Transportation Co., Chicago. The clamping jaws of the unit are designed to prevent damage to the coil from distortion or telescoping. Capacity of the attachment is 60,000 lb. It costs $25,200.

•

**Special movie effects,** such as animated television commercials and tilting are the job of a new movie camera made by Animation Equipment Corp., New Rochelle, N. Y. For complicated effects, the unit can be converted from 35mm. to 16mm. in about five minutes—eliminating the realignment required when a separate camera is used for each size film. Price: about $4,800.

# Waiting for Seaway To Bring in Business

SWEATING out Toledo Marine Terminals' long wait for better business keeps Vice-Pres. Glenn Tonjes working long hours.

"The dock operator who thinks he's going to make a quick fortune when the St. Lawrence Seaway rush starts is in for a big disappointment. He's going to have to wait a damned long time for that fortune."

That's the blunt advice of a man who ought to know—E. Paul Brooks, the rangy, red-haired president of Toledo Marine Terminals, Inc. Brooks and his five co-owners of TMT have been waiting five years for a pot of gold to hove into sight along with the arrival of Seaway traffic. They still have no idea when—or whether—the promise implied by the Seaway will be fulfilled.

• **Ground-Floor Project**—Only now, after five rugged years, is their company beginning to catch its breath. They founded TMT in 1950, with an eye less to immediate profit-making, more to the chance of getting in on the ground floor of a project that seemed bound to boom when the Seaway became a reality—an event that's scheduled for 1959. They set up its operations on the bank of the Maumee River, opposite Toledo's downtown business district.

Each year since then, the number of ships calling at TMT's docks has increased. But only when the 1955 Great Lakes shipping season closed did Brooks and his colleagues find a firm foundation for the hope that the tide might be starting to run their way. In 1950, their dock served only 11 ships and handled a total of just 1,128 tons of cargo. Last year, 145 vessels, 119 of them foreign-flag ships, called in and TMT handled 67,500 tons of cargo.

The growth through the years in between has gradually put TMT in

**SHIPPING** volume grows gradually through Great Lakes seasons, but in winter TMT's dock doubles as ship-repair center.

**TRUCKING** terminal, rail tracks stand near dockside, enabling shippers to get their goods hard by the export vessels.

a comfortable position. But this paradox remains: While TMT, the only general marine terminal in Toledo, handles 67,500 tons of cargo a year, the port of Toledo as a whole handles 35-million tons of cargo a year. The great disparity here is due, of course, to the fact that TMT doesn't serve the Great Lakes ships that bring to Toledo a vast tonnage of bulk commodities—coal, ore, grain, and oil—all of which are loaded and unloaded at other privately owned terminals specially designed for their handling.

Much the same situation prevails at all the Great Lakes ports—bulk commodities pour in great quantity through specially built terminals and packaged general cargo handling is an infinitesimally small part of the ports' work. There's dispute among dock operators along the Great Lakes over just how much extra business the Seaway will eventually bring them. But they're pretty well agreed that the Seaway's publicists are way off the beam in forecasting a big and rapid increase in the flow of general cargo in the first year or two of the Seaway's operation.

The idea of building the terminal was in Brooks' mind for years before he took any concrete steps to establish TMT. All through the postwar years he preached Toledo's need for a general marine terminal that would help develop overseas traffic for the port. In 1948, he was chairman of a committee of the Toledo Port Commission that surveyed more than 500 companies around Toledo to determine the port's traffic potential. From the data it gathered, Brooks' committee calculated that the port had an immediate potential of 200,000 tons of general cargo a year. But the port had no general marine terminal facilities at that time. And even by 1950, more than a year after the survey was published, there were still no signs that anyone was going to build a terminal.

• **Six-Man Team**—That's when Brooks got together with F. Cyril Greenhill, the then president of Acklin Stamping Co., in Toledo. Together they approached a wealthy Toledo industrialist, Charles Fruchtman, and the three of them formed TMT. They put up $67,500 as initial capital, split 5,000 shares of no-par-value common stock among themselves. Since then, TMT has been recapitalized to bring in three more owners—Rear-Adm. Robert Cary (USN, Ret.); Robert Ragan, a Toledo attorney; and Glenn Tonjes, now a TMT vice-president. These six are TMT's only stockholders.

The founders had some luck right at the start: They were able to buy a parcel of riverfront property from New York Central RR. It was a choice piece of land for their purposes: It was centrally located and a New York Central

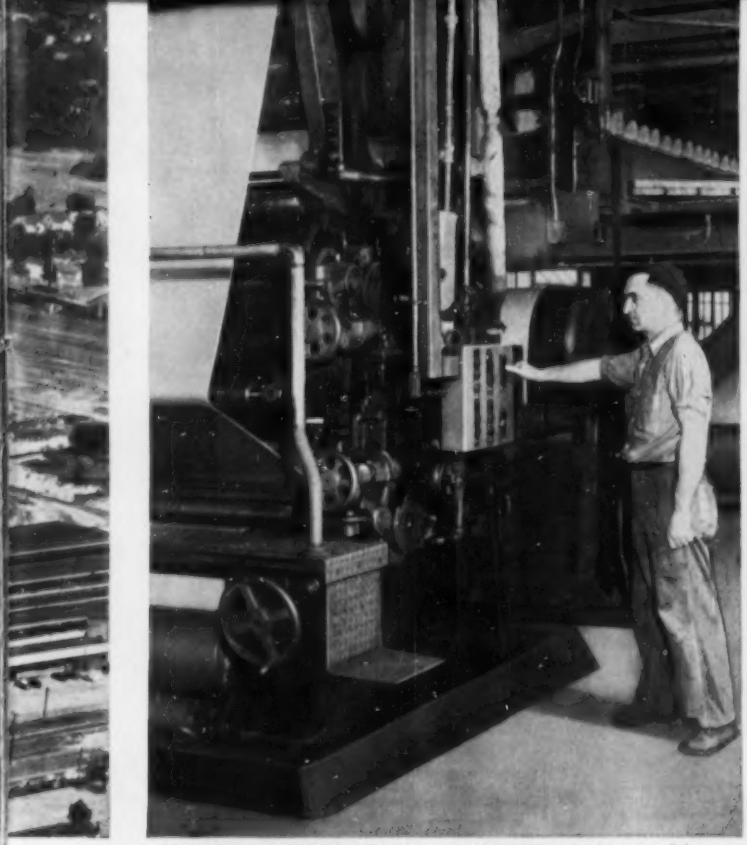
**PACKAGING** experts in dockside plant teach shippers how to box their goods for export.

# PROGRESS IN DIRECT CURRENT DRIVES

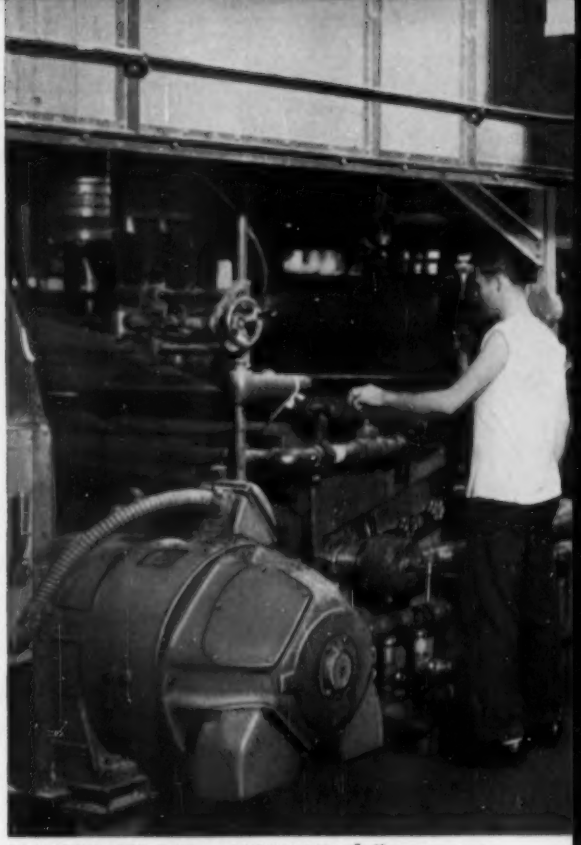
**$20 MILLION** has been invested by General Electric in new manufacturing facilities at the Direct Current Motor and Generator Department in Erie, Pennsylvania. As automation becomes a reality the demand for direct-current equipment grows. Typical of the performance of direct-current drives are the applications shown at right.

# General Electric Expands Facilities to

**3-DIMENSIONAL SCALE MODEL** of General Electric's new direct-current motor plant being viewed by G-E executives: General Manager Oscar L. Dunn, Executive Vice President Robert Paxton and Vice President James M. Crawford. Modern factory will turn out versatile, d-c equipment to meet industry's demand for high output, low cost production.



**SMOOTH ACCELERATION AND DECELERATION** of d-c motors help Ottawa River Paper Company speed up output, reduce waste and downtime. Speed Variator unit, used in this installation, converts a-c power to d-c in a compact, easily installed package.



**FLEXIBILITY AND ACCURACY** of direct-current equipment enable Springs Cotton Mills Grace Bleachery to match machine speeds to the individual requirements of each job and thereby produce a superior product.

# Meet U.S. Industry's Trend to D-c Drives

As more industries swing to automatic processing to boost production and reduce unit cost, there is a corresponding increase in the demand for direct-current drives. To meet this growing demand, a new General Electric d-c motor plant in Erie, Pa., will be devoted to the design and manufacture of direct-current drives and equipment.

• **Challenging Future**—To maintain a rising living standard with a decrease in the ratio of workers to total population, output per U.S. worker must grow increasingly higher during the next ten years. Many businesses are meeting this challenge with continuous processing and a greater use of direct-current motors for higher productivity.

• **Increased Efficiency**—In a wide variety of applications precise control characteristics of d-c drives are helping to increase operating efficiency. Since installing a General Electric d-c log carriage drive Ball Lumber Co., Hauser, Oregon, reports production has increased 33%. At Puget Sound Naval Shipyard output and efficiency were increased with installation of a G-E Speed Variator hoist drive. Crane operators had found it difficult to position loads accurately because of the tendency of hook to lower faster with a heavy load than with a light load. The new d-c drive makes it possible to move loads at a set speed relatively unaffected by weight. Now, with this controlled speed, operators can pinpoint drops.

• **Operating Speeds Go Higher**—The trend toward d-c for rapid production is industry-wide. At Scott Paper Company, machines can deliver lightweight products at speeds well in excess of 2,000 feet per minute. New machine tools are cutting metals four times faster. Similar examples are found in lumber, materials handling, textiles, rubber, cement, mining and many other industries. They have found that the precise control and flexibility of drive required for accelerated production are best supplied by d-c equipment.

• **Manufacturing Costs Reduced**—Direct-current drives often increase the versatility and output of a driven machine to such an extent that cost per unit of production is substantially reduced. In addition, the use of direct-current "electrical transmissions" usually helps cut mechanical maintenance costs.

• **D-c Power Easily Obtained**—A-c to d-c conversion equipment, such as rectifiers and motor-generator sets, enable industry to obtain d-c power simply and economically. Packaged conversion units may be placed next to driven machines or in other convenient load-center locations.

• **Applying DC**—For further information on direct-current drives please contact a General Electric Apparatus Sales Office. G-E engineering specialists, familiar with industry's needs, have the complete story on how production problems can be solved by the intelligent application of d-c equipment. *Direct Current Motor and Generator Department, General Electric Company, Erie, Pennsylvania.* 018-3

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spur track linked it with the 14 other railroads serving Toledo. The Central had used the site as a coal loading dock and more than 1,000 ft. of concrete dock lined the river at that point. The Maumee River's main shipping channel—maintained at a depth of 25 ft.—lay just off the edge of the dock.

The price was $55,000. "So," says Brooks, "we were in business. But when we moved in we knew that our investment would be frozen a long time before we could expect any returns."

• **Slow Record**—Sure enough, when TMT wound up its first full year of operation, at the end of the 1951 shipping season, its books showed a net loss—to the tune of $14,000. From 1952 to 1955, TMT returned a total profit of a little more than $50,000 for the period.

• **Services**—In that time, TMT's backers have learned just what a marine terminal operator must do to keep his business going. The job breaks down into two main parts: looking after the manufacturer who ships his goods through the terminal, and servicing the shipping lines that bring their vessels to the dock.

To the shipper, TMT offers dock facilities that give a manufacturer the opportunity to get his goods aboard foreign vessels. Because of its rail link, a shipper can send his goods right to the dockside without transshipment. He gets the benefit of TMT's warehouses, too. Packaging experts are on the dock to advise shippers how to secure their goods for export. This part of the operation is run in space that TMT leases to National Export Packaging, Inc. Also on the dock are agents of the steamship lines whose vessels dock at TMT. These agents can give a shipper contact with all foreign lines serving the market in which he is interested.

For the shipping lines, also, TMT has varied bait. There's the location—right beside the 25-ft.-deep shipping channel. Freighters can dock here without using tugs, and that's an important factor in holding down a shipping line's costs. Then, too, TMT functions as an originator of cargo for the lines. It helps keep the steamship agents in contact with exporters who are looking for a vessel to move their goods overseas.

• **Building**—As TMT has been finding exactly what its job entails, it has been developing the old New York Central coal dock fast and furiously. Six years ago, there was little on the 6¼-acre site beyond the concrete dock and one small brick building.

When the first ships called at TMT, the company had no cranes to hoist cargo from the ships' holds to the dock. It relied, instead, on the ships' own cargo-handling winches and posts. But

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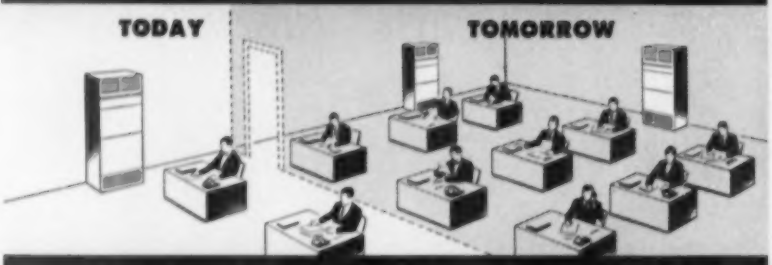


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in 1952 came a rush of boxed cargo for export from the assembly lines of Willys Motors, Inc. Dockside means for handling this were necessary, so TMT bought an 8-ton mobile crane. Next year, it got a 12-ton mobile crane and a 5-ton fork lift truck. Two years ago, even these facilities weren't enough, so it installed a 40-ton derrick—the second largest crane among marine terminals on the Great Lakes—that set it back $40,000. These facilities, plus a wide range of fork lift trucks and cargo slings and hooks, should meet TMT's needs for several years yet, says TMT manager Dodd Tonjes.

On the edge of the dock, TMT has put in double rail tracks. In the land behind there's now a 32-door truck terminal, a 210,000 cu. ft. warehouse, a 25,000 cu. ft. area for heated storage, a two-lane roadway leading to the truck terminal, and five acres of leveled outside storage space.

• **When Freeze-Up Comes**—It wasn't hard for TMT's founders to forecast that their outfit probably would expand along these lines. But for a while they faced the problem of what their company should do during the winter, when Great Lakes shipping ceases. Today, with all its facilities, TMT is able to get through the winter months successfully. It leases its dock to a Toledo ship repair outfit that overhauls Great Lakes ore boats there; much of its warehouse space to companies that have storage problems; its truck terminal to a trucking company. It rents office space to another company, stacks goods, like building materials and manhole covers, in its open storage space, and collects rent for another part of its plant from National Export Packaging, Inc.

Last year was TMT's best year so far. It chalked up a net profit of $66,289. But a dock improvement program that the company is working on this winter will eat up $65,000 of that.

"In other words," says one of TMT's founders, "we've made a little money on the company. But so far we haven't put much of it in our pockets."

• **How It Grew**—Half a dozen factors have spurred the terminal's growth since 1950.

Most important at the start of operations were two valuable jobs: one from Kaiser-Willys for the export of 1,000 Kaiser cars to Argentina, another from Champion Spark Plug Co. for the import of some 12,000 tons of steel. Two more steel cargoes kept the early growth going.

With those jobs done, TMT was able to round up potential shippers more easily. Brooks and his co-owners worked through shipping line agents at the terminal to convince Armco Steel Corp. that its steel exports to Europe could be handled economically

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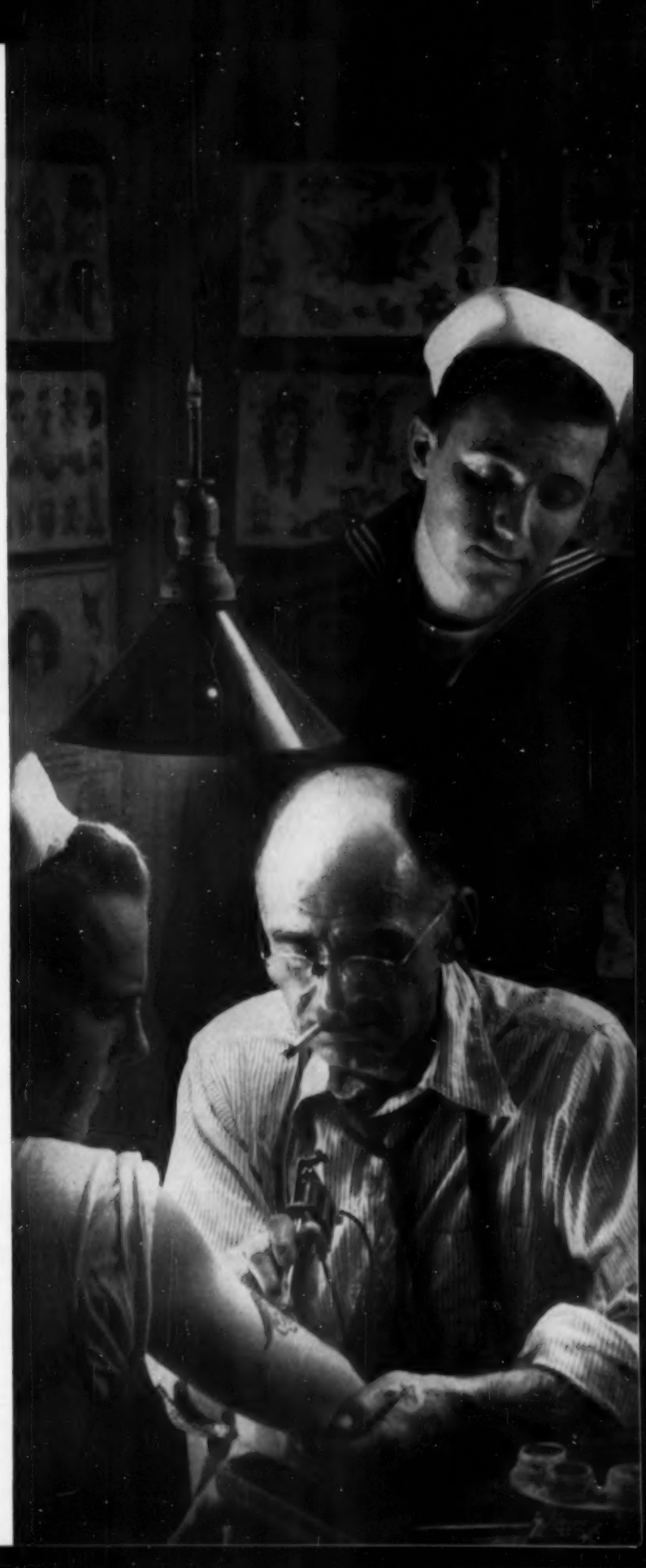

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at the terminal. They used the same method to persuade Bethlehem Steel Co. to change its method of shipping steel to the Toledo area. It used to ship much of it to Detroit, transfer it to trucks, and bring it by road to Toledo. Now TMT says that Bethlehem, by shipping directly to the terminal, cuts about $2.60 a ton from transportation costs.

• **No Campaigns**—TMT has not tried to speed growth through extensive promotion. Brooks explains: "We found the best and simplest way to get business was to work efficiently, and let our reputation clinch future jobs. So far it has paid off."

• **Job Ahead**—But the terminal operators don't say whether they'll bank on this method to overcome one of their more pressing current problems: diversification of their cargoes. Their big cargo handling jobs for Libbey-Owens-Ford won't last much longer. That company's $50-million plant expansion at Toledo and Ottawa, Ill., is near completion (BW—Feb.4'56,p62) and it will be able to cut off imports when production starts. And if domestic steel shippers should change their traffic pattern, TMT would lose five-sixths of its work —of the 67,500 tons of cargo it handled last year, 55,000 tons was in steel.

They are optimistic that the Seaway eventually will bring them a wider range of cargoes. And when the Seaway does start operating, they expect there'll be some increase in their business. Today, says Brooks, many companies refuse to change their long-established traffic patterns and begin using a water route to Toledo. But when the Seaway opens, he thinks they'll start seeing the water routes' advantages.

• **Forecasts**—Nevertheless, TMT's owners remain cautious about projections of their business. Vice-Pres. Glenn Tonjes says only: "If we do not overextend ourselves and expand only as the demand grows, we'll have a good profitable operation when the Seaway comes." And Pres. Brooks says his original enthusiasm for TMT is "undimmed after five years. Our good location will overcome what larger Great Lakes port cities have to offer foreign shippers."

There is one dark spot in the future, though, and TMT's owners are reluctant to say much about it. But other Toledo businessmen who have been watching TMT's formative struggles these last five years, and who feel that the company has a good chance of making money when the Seaway comes, aren't so coy. They recognize that if Seaway volume turns out to be heavy, TMT will face some rough times—for there's always the possibility that Toledo's new Port Authority may move into the cargo terminal business and give TMT hot competition. END

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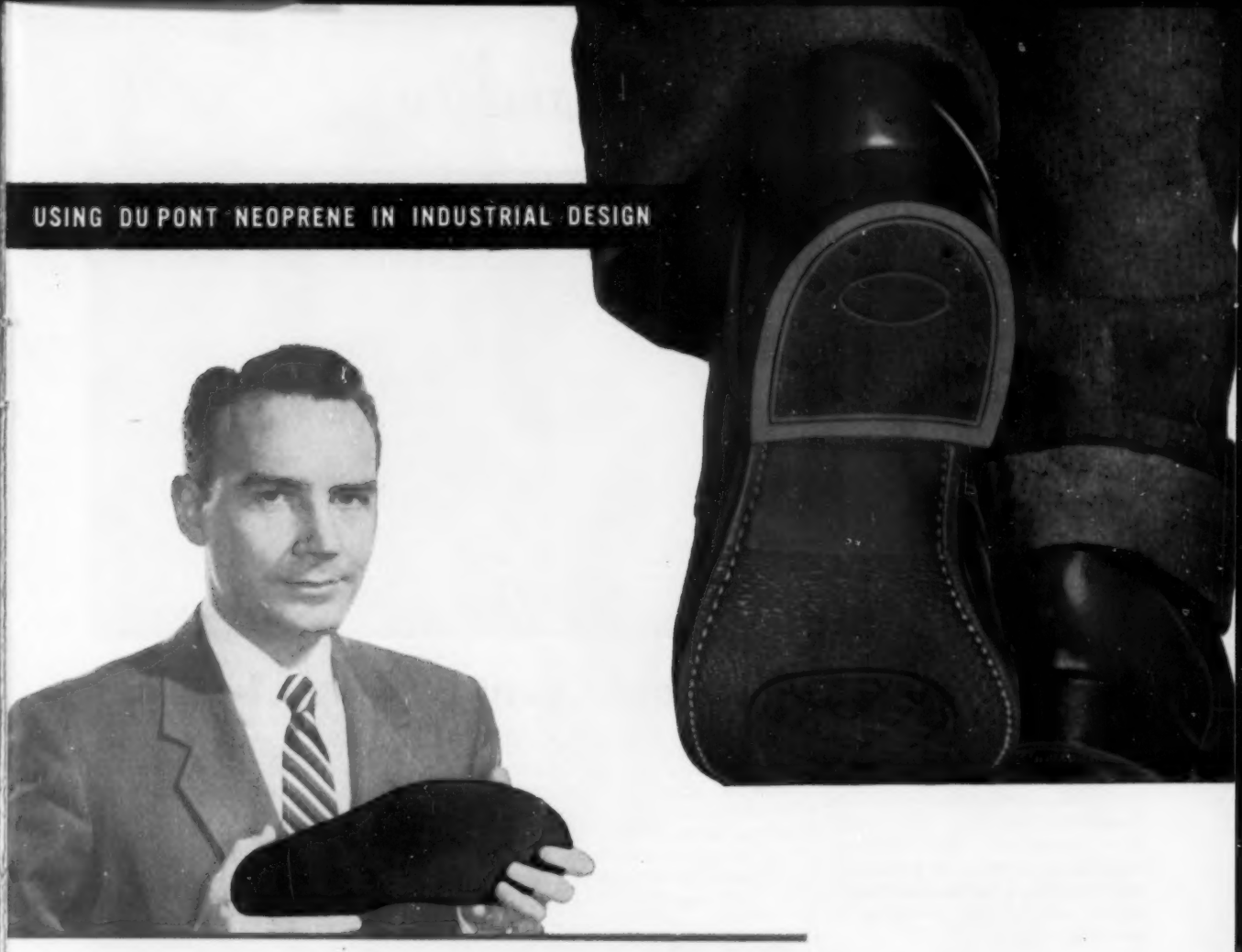

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Take the shoe industry as an example. The success rubber soles had in sport shoes naturally led to their use on work and safety shoes. But here, those same soles failed rapidly. The representative of the rubber-goods supplier went into the field, talked to the shoe manufacturers and the men who wore the shoes. They laid the problem right in his lap. Hot surfaces made ordinary rubber soft and sticky; oily floors made it swell out of shape; chemicals ruined it. The answer to these problems came from representatives of a number of rubber-soling manufacturers—*special-purpose neoprene* for shoe soles that wore like iron, but felt as soft and comfortable as dress shoes.

This first use of neoprene in industrial work shoes led to a series of developments in rubber soles. Rubber soles were too slippery, one shoe manufacturer said; his soling supplier's representative helped develop a neoprene-cord sole. Too stiff, another said; neoprene-cork soles evolved. Too heavy—and closed-cell neoprene sponge became the answer. Chips and shavings on machine-shop floors were cutting rubber soles to pieces; a neoprene crepe sole was developed. The end result is that over 50 million neoprene soles have been put into service, bringing longer wear, greater comfort and safety to industrial work and safety shoes.

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*Write for samples and suggestions showing how Dennison PRES-a-ply can make your labeling more efficient.*

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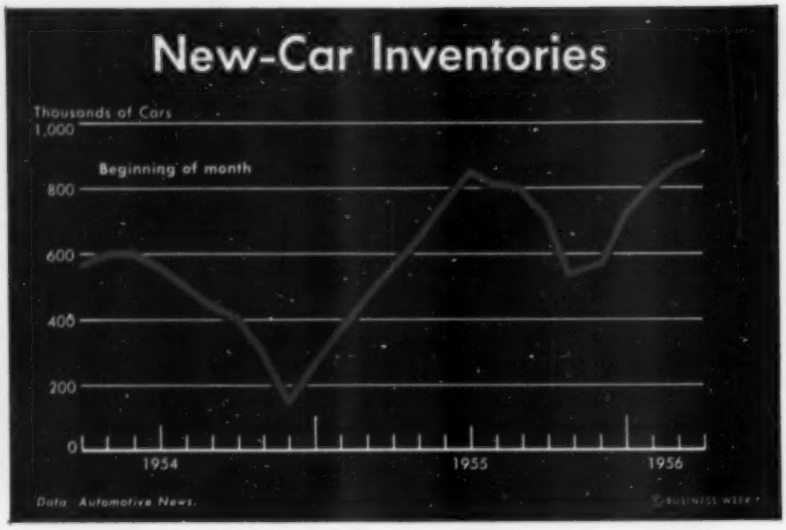
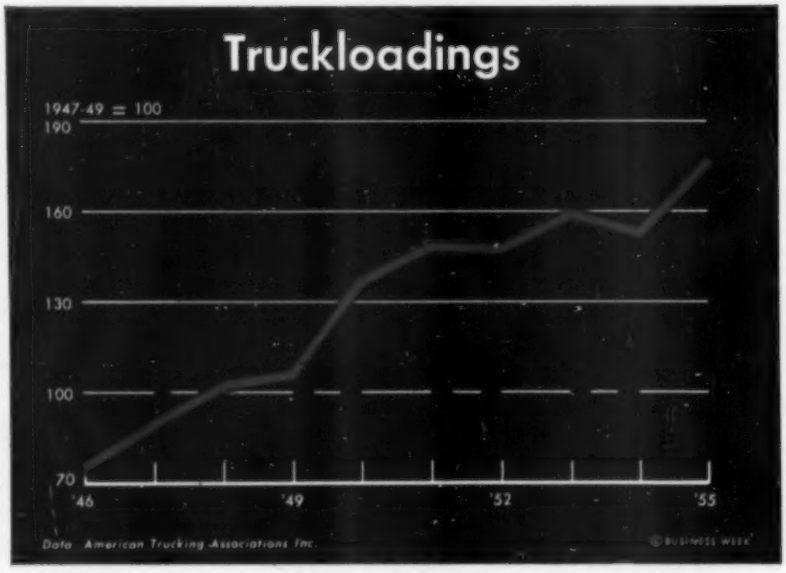
## CHARTS OF THE WEEK




# The Nose Count Is Nearly 1-Million

Dealers held 904,220 new cars on Mar. 1, Automotive News reports. That's an all-time high and an increase of 34,000 over Feb. 1 stocks. The inventory figures include cars in transit as well as cars at dealerships. The March inventory was 61% above a year ago.

New-car registrations were only 432,000 in January, rose to 437,000 in February. If March sales come close to the 637,000 of March, 1955, inventories will be reduced for the first time in months, as March production is expected to total just under 600,000.




# Rolling Faster Than Ever

Intercity truckers came out of a slight decline to roll up a new freight-carrying record last year. The tonnage of the freight they carried jumped 15% above 1954, and 11% above the previous record set in 1953. The American Truck-

# "Copy Cats" Make Costly Errors

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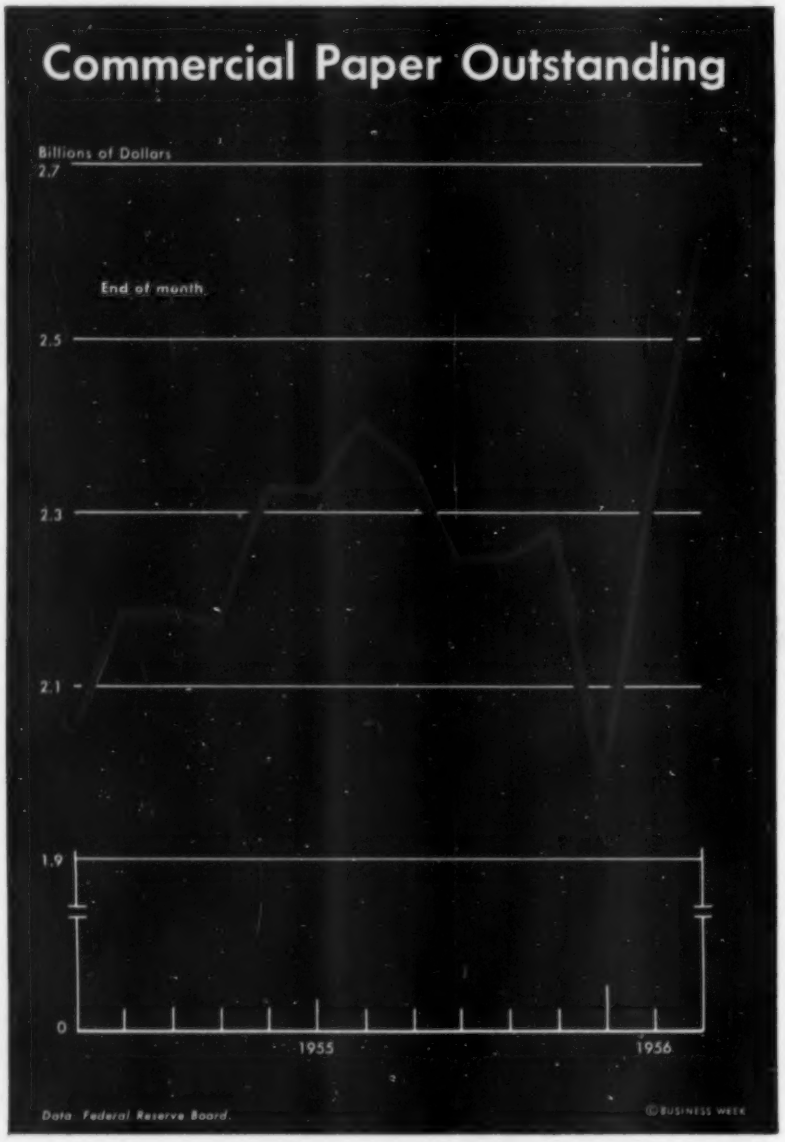
ing Associations reported this after studying the past two years' operations of 1,762 Class I intercity common and contract trucking companies.

These truckers moved 265-million tons of freight in 1955; 230-million tons in 1954. In the fourth quarter last year they handled about 71-million tons, compared with 61-million tons in the same period of 1954.

In the intercity trucking business, as in many others, plenty of impetus came from last year's higher auto production. Auto transporters made the highest year-to-year gain in business—a jump of 43.5%. Carriers of refrigerated liquids made the next biggest gain, with an increase of 16.5% over 1954. And heavy machinery haulers were third, with a 15.6% gain over 1954.




## Robbing Peter to Pay Paul

Commercial and finance company paper outstanding in the U.S. at the end of February soared to a new peak, mostly due to borrowing by sales finance companies to finance consumer purchases.

Volume for the month was a little over $2.6-billion—up 11% from January, and up 20% from February, 1955. It is nearly 9% above the previous peak of $2.4-billion set in July, 1955.

Sales finance company paper made up about 80% of the total outstanding. Some of the proceeds were used to repay bank loans.

# How an industry's imagination captured the hearts of women

No industry is closer to the hearts of American women than the home appliance industry. And no industry has shown more creative imagination in supplying to women the time-saving and work-saving conveniences that make for better, more leisurely living.

Women love color. Now they have it in ranges and refrigerators that once were always white. They love new convenience. They get it in the new "built-in" ovens and washer-dryer combinations. They love lasting beauty. It's theirs, in durable steel cabinets fashioned to the shapes and styles of the moment.

In the making of these modern marvels of convenience, the appliance industry depends in large measure on high-quality sheet and strip steel. J&L is one of the major suppliers of these steel products, and has been serving this great industry since the earliest days of appliance manufacture.

*Look to J&L . . . for the steels that work for modern industry*

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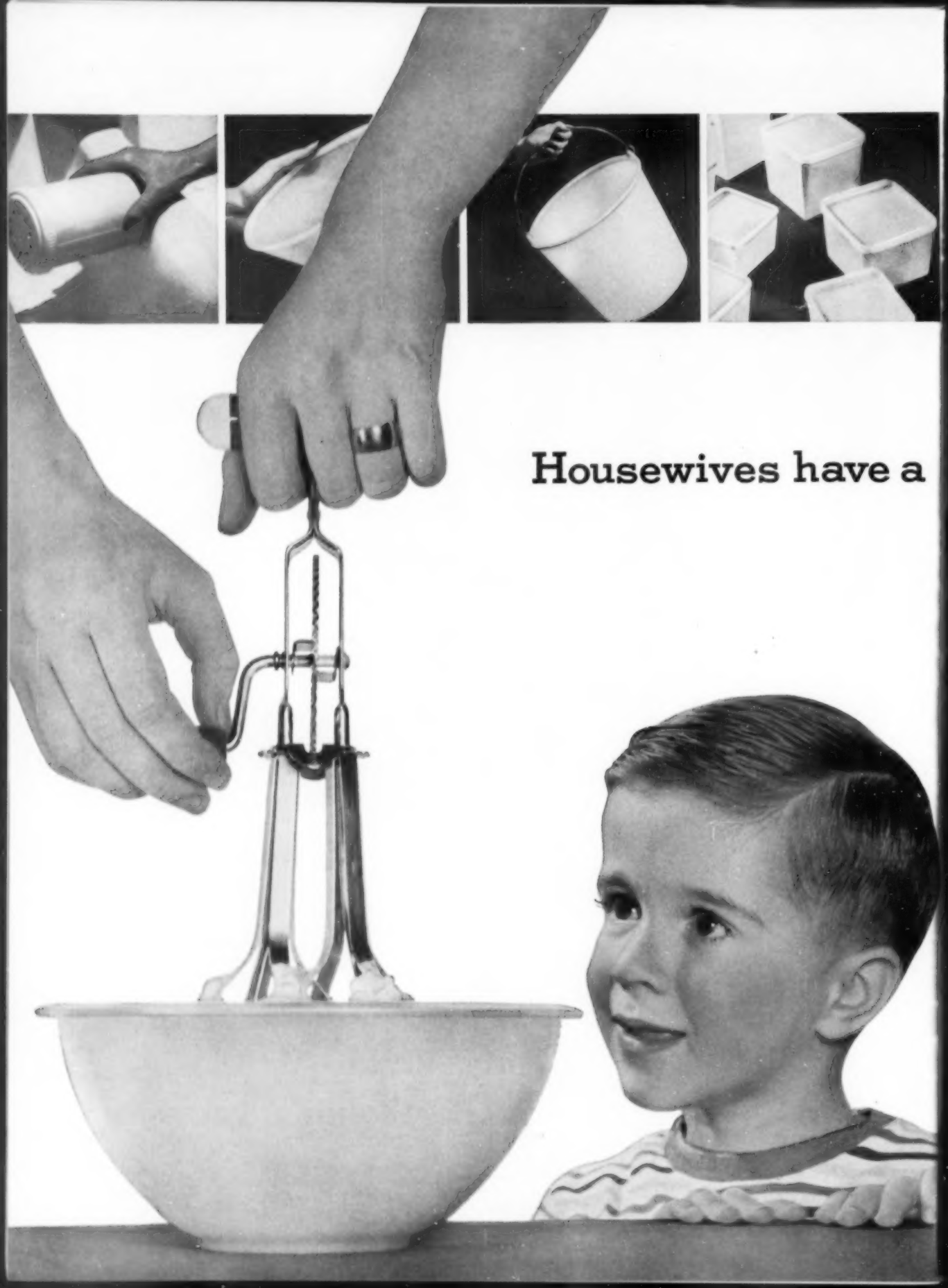
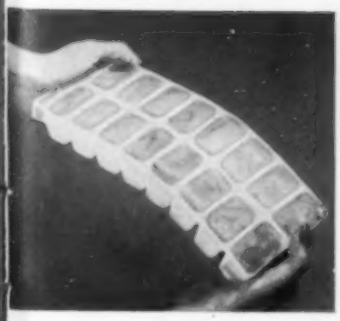

Housewives have a



# versatile friend in Eastman's Polyethylene

It's easy to see why housewives buy so many housewares made of Tenite Polyethylene.

This Eastman plastic has properties made to order for household duty.

Tenite Polyethylene is colorful, strong and tough. It is light in weight, flexible and practically unbreakable. It does not chip or dent even when struck or dropped. Resilient, it resists permanent deformation and affords airtight seals for containers and closures, providing an effective barrier to moisture and odors.

Tasteless and odorless, it is ideal for food containers. Its soft surface minimizes kitchen clatter and also prevents marring of delicate surfaces.

Properties like these help Tenite Polyethylene aid housewives in many other ways. Polyethylene film, containers and paper coatings for packaging use are now familiar to everyone. And, unseen to the housewife are numerous Polyethylene components such as dishwasher pumps, tubing, wire insulation and television tube shields that add life to household equipment.

Tenite Polyethylene has found diverse jobs in many fields. Could this versatile plastic give a selling lift, better performance or longer life to some product you make or use? For help in evaluating the many desirable properties of Tenite Polyethylene, write EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

**TENITE**
**POLYETHYLENE**
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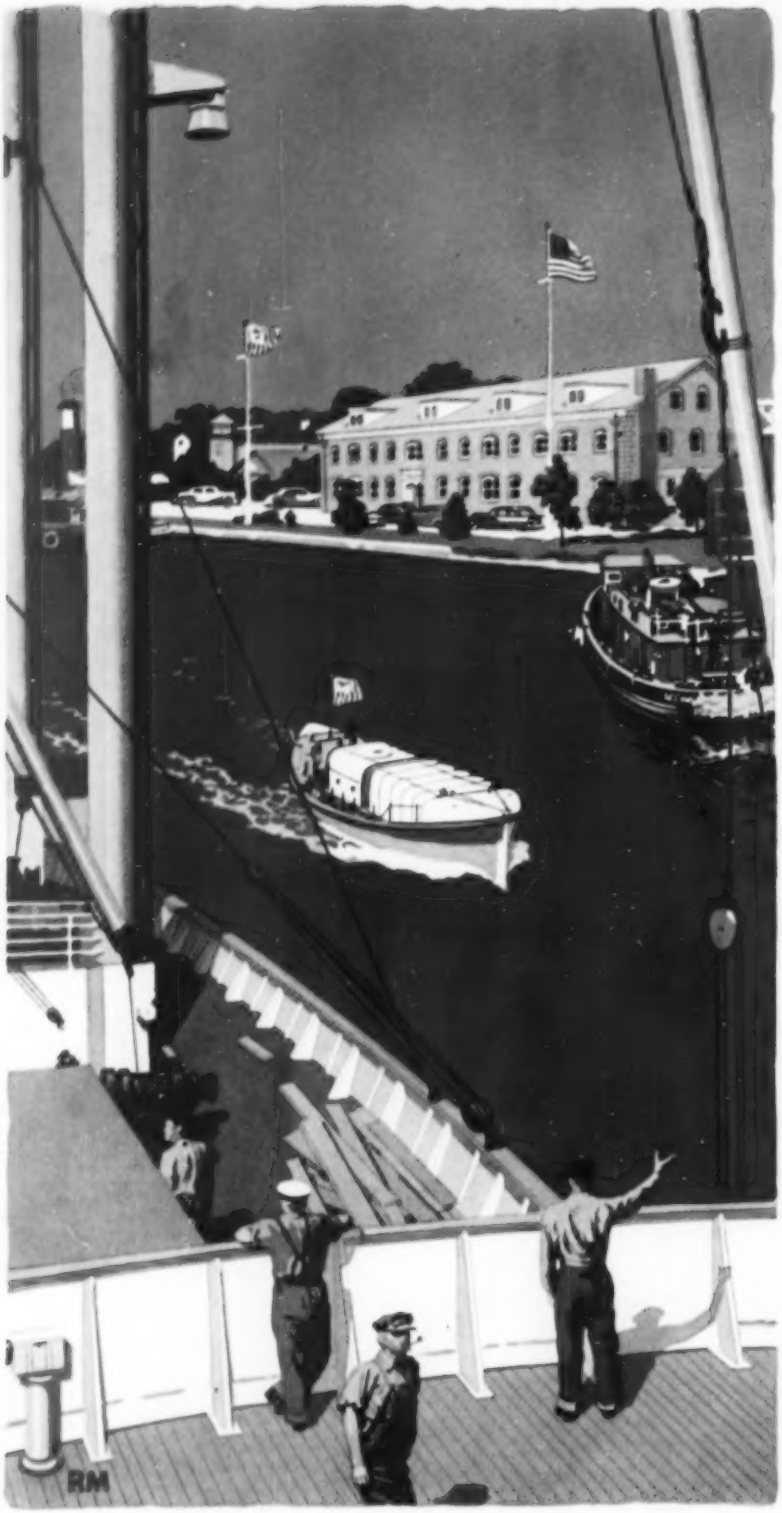
# "UPSTATE, N.Y."



THERE'S a beckoning new frontier for industry in the "North Country"... that beautiful part of Upstate New York that lies near the St. Lawrence Seaway.

The "North Country" offers you plenty of home-owning labor... transportation by rail and water... a fine place to live and work. Here is a superb vacationland — closely surrounded by North America's richest markets — including Canada, our greatest export market, right across the St. Lawrence River.

You can be sure of *all the electrical power you need* in Upstate New York, at a cost lower than the national average. It's supplied by Niagara Mohawk, which serves over one million Upstate homes, farms and industries. For more facts about your opportunities here, drop a line to Earle J. Machold, President, Niagara Mohawk Power Corporation, Syracuse, N. Y.

At left is an artist's conception of the St. Lawrence seaway — soon to become a great artery of world trade — as it flows along a new industrial frontier, the "North Country" of New York State.

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# Atom's Biggest Worry —Getting Itself Insured

1. SCENE: AEC reactor at Arco, Idaho, was used to stage a test "accident."

2. FLASH followed power boost above 10-million kw., removal of control rod.

Toughest long-range problems facing the budding atomic power industry are technological—better equipment, cheaper fuels, and a host of related puzzlers. But the industry is losing a lot more sleep these nights over a more mundane matter—insurance.

A glance at the pictures will give you an idea what's on its mind.

The "accident" that's pictured was a deliberate, planned accident. It was staged by Atomic Energy Commission scientists in July, 1954, at the Argonne National Laboratory's Borax I reactor facility at Arco, Idaho. The small reactor, as expected, blew itself to pieces. Even so, radiation contamination extended only over a small area.

• **Chance in a Billion**—What worries atomic plant builders and their suppliers, though, is not an accident of that sort, with limited effects confined to a small area. What they are concerned about is the off chance—extremely remote, but still conceivable—that an accident at an atomic plant might scatter deadly radioactive materials over a wide area.

Such an accident has not occurred since the first atomic reactor was built in 1942. And, as one veteran atomic plant builder puts it, the chances are "probably less than one in a billion." Still, the industry worries over even the remote possibility.

• **How Much?**—That's why builders of atomic power stations want insurance coverage far exceeding any previous peacetime demand from industry—up to $100-million to $200-million in liability insurance for a single plant. By pooling their resources, the insurance companies will probably offer such coverage totaling about $65-million for a plant.

That's more insurance than you can buy for any other kind of production facility. Insurance on large, conventionally fueled electric generating plants seldom runs over $15-million.

But atomic planners are holding out for $100-million-plus coverage. They say they can't go much farther with their projects until they get this at prices they can afford.

The upshot probably will be some form of government insurance to take up the slack. The Joint Congressional Committee on Atomic Energy already is considering legislation along these lines. The AEC's blessing is expected.

• **Limited Effects**—The reactor, the furnace of an atomic power plant, contains highly radioactive materials. If the reactor vessel ruptures, these materials can spill out in gaseous and liquid form. The big danger—however remote it may be—is that they will get into the atmosphere, blow away, and fall to earth at a distance, producing a fall-out like that of a nuclear bomb. That's the "one chance in a billion" that concerns the industry.

To date, reactor incidents have pro-

3. EXPLOSION hurled parts of control housing and fuel plates 80 ft. in air.

4. DEBRIS included parts of reactor tank and core. Most fuel element fragments fell within 200 ft. Dangerous fallout was confined within a few hundred feet.

Barber-Greene Ditchers have traditionally set the pace in cutting virtually anything — especially costs. Here is the newest and smallest of the Barber-Greene Ditcher line which ranges from 8 feet 3 inches deep and 24 inches wide.

# Little ditcher provides big savings on small jobs

With this compact, ruggedly built ditcher, hand digging is no longer economical—even on smallest jobs.

Built to "take it," this small ditcher provides low-cost trenching for gas, water, electric and telephone services . . . for every kind of underground wiring—including cables for power, telephone, traffic and railroad signals. It digs *narrow* trenches for fast, efficient installation of lawn sprinkler systems . . . for street and airport lighting lines.

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CONVEYORS...LOADERS...DITCHERS...ASPHALT PAVING EQUIPMENT

duced much more limited effects. Radiation damage has been confined to a small area, chiefly in the buildings housing the damaged reactors.

In the most recent incident—also at an AEC facility at Arco, Idaho—only the reactor itself appears to have been destroyed. The AEC so far has made no announcement about the incident, but is said to be considering one. What apparently happened was that some one "pushed the wrong button" and a reactor core melted down quickly. Unlike Borax I (pictures, page 119), which was earmarked for destruction, the reactor involved in the recent incident was a permanent experimental plant.

Reactors are so designed that they cannot cause a true nuclear explosion like that of an atom bomb. They are also equipped with numerous automatic and manual controls to shut them down if the number and speed of fission reactions exceed the safety level.

But faulty operation of the controls, as occurred at Canada's Chalk River plant (BW—May1'54,p146) can lead to excessive reactivity or heat and produce leaks in the reactor vessel. Excessive reactivity can cause the fuel to vaporize or melt. In some cases, this can result in a chemical explosion—as in the Borax I "accident." The experience in this test suggests that such an explosion would involve only a relatively small area.

• **City Problems**—But the Arco facilities, far from any population centers, are a far cry from the sites selected for a number of atomic power plants. These are planned for the vicinity of New York City, Chicago, Detroit, and other centers of population, though none is contemplated yet for a mid-city location.

Only an incredible chain of circumstances—faulty reactor operation, an extremely violent chemical explosion, and highly unusual weather conditions, among other things—could make such plants a risk to nearby centers. But neither the utilities nor their suppliers, who could conceivably be charged with equipment failures, want to go ahead without insurance protection against its long-shot risk. A utility executive explains it this way.

"We certainly don't believe such an accident will ever happen," he says. "But if it did, the liability claims could put us out of business overnight. You just can't ask your directors and stockholders to take such a chance, however remote, without ample insurance."

• **$100-Million Question**—Industry demands for liability coverage ranging from $100-million to $200-million are just stabs in the dark. Actual damage from a reactor accident almost certainly would run far less. But there is no definite proof of this.

Reactor accidents have been so few

C. K. Whiteside, President, Great Plains Life Insurance Co., Lubbock, Texas

**Architect:** David S. Castle.
**General Contractor:** BMFP Construction Co.
**Mechanical Contractor:** Beals Plumbing and Heating.
**Consulting Engineer:** Leonard E. Kanto.

With 155,453 sq. ft. of floor space, Great Plains Life Building offers the ultimate in air conditioned comfort for a variety of tenants – including dentists (above, one of several), doctors, oil-exploration offices, a bank, a radio station (below), and a restaurant.

# In Texas, even a day's temperature change can be BIG!

## Requiring heating in the morning and cooling by midafternoon, Great Plains Life Building depends on American Blower equipment

In addition to equipment for complete central systems – American Blower offers packaged air conditioners for offices, stores, industrial plants, and similar applications.

Heating and cooling on the same day? That's what American Blower air conditioning equipment provides in the new 20-story Great Plains Life Insurance Building, Lubbock, Texas. For, on some days, outdoor temperatures jump from 25° F. in the morning to 82° F. by midafternoon!

Using American Blower multi-zone units, each floor is divided into four air conditioning zones . . . which can be controlled separately to allow individual comfort levels for tenants.

And despite occasional sand storms –lasting from one to three days, with winds up to 70 mph – the indoor atmosphere always remains fresh and clean, for it is filtered, conditioned, and distributed at over 220,000 cu. ft. per min.

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that there is comparatively little data on their causes and effects. Part of this gap will be filled by AEC experiments at Arco in which several types of reactors will get exacting safety tests.

Public opinion is a major consideration of both atomic plant builders and the insurance industry. A majority of people in these circles feel the public will want virtually unlimited insurance on atomic power plants, at least for the next decade or so.

"The trouble with atomic energy is that its first product was a bomb," explains one scientist. "If the first electrical device had been an electric chair, the utility industry almost certainly would have had similar insurance problems. People know that radiation is dangerous and that reactors contain radiation sources. It will take time to convince them that reactors are no more deadly than other types of industrial equipment."

• **Insurance Pools**—The first privately owned atomic power plant, in the New York City area, is not scheduled for completion until 1959. Another commercial plant, near Pittsburgh, will be finished next year, but the AEC will own the reactor portion and assume responsibility for its operation.

So the insurance industry was under no pressure to delve into potential coverage of such plants until a little over a year ago. At that point AEC asked a committee of 11 executives of fire and casualty companies to make a study. The insurers have been working hard at the problem ever since.

From the start, insurance people figured they would have to form pools for atomic plant coverage. Protection against plant damage alone had to be greater than required by other industries, because investments in proposed atomic power stations may range from $10-million to $100-million.

Two insurance syndicates now are forming, one among stock companies and one of mutuals. The stock companies' nuclear energy insurance syndicate hopes to offer property insurance up to $50-million. A similar goal for third-party liability (insurance for injury or damage to others) has been set for another syndicate being formed by stock companies. The mutual companies plan to offer up to $15-million in atomic plant insurance.

The insurance companies, however, have no plans to write any additional insurance for reactor component makers, who might well be included in claims arising from plant accidents. This does not sit too well with component makers, who have been in the front ranks of those demanding some form of government excess insurance.

• **High Rates?**—Insurers are not talking yet about the kind of rates they will ask for atomic coverage. Utilities and equipment makers expect rates to be higher than for conventional industrial insurance. They're probably right. Big question is how much higher.

Equipment makers say that several utilities just beginning to plan atomic plants are waiting to learn insurance costs. If these are too high, the utilities are likely to decide in favor of conventionally fueled plants.

• **Government Help**—Even among insurers the possibility of government excess insurance for third-party liability has been long considered (BW—May 14'55,p134). But almost to a man, the insurers want to avoid government insurance if possible, limit it if not.

Until recently they were supported by Consolidated Edison Co. of New York, which is building a reactor plant, and Westinghouse Electric Corp., an equipment supplier. Con Ed and Westinghouse argued that insurance companies should be given time to develop their best possible offer for atomic coverage. Now these firms agree with others in the atomic field, notably General Electric, which have insisted from the start that government help would be required.

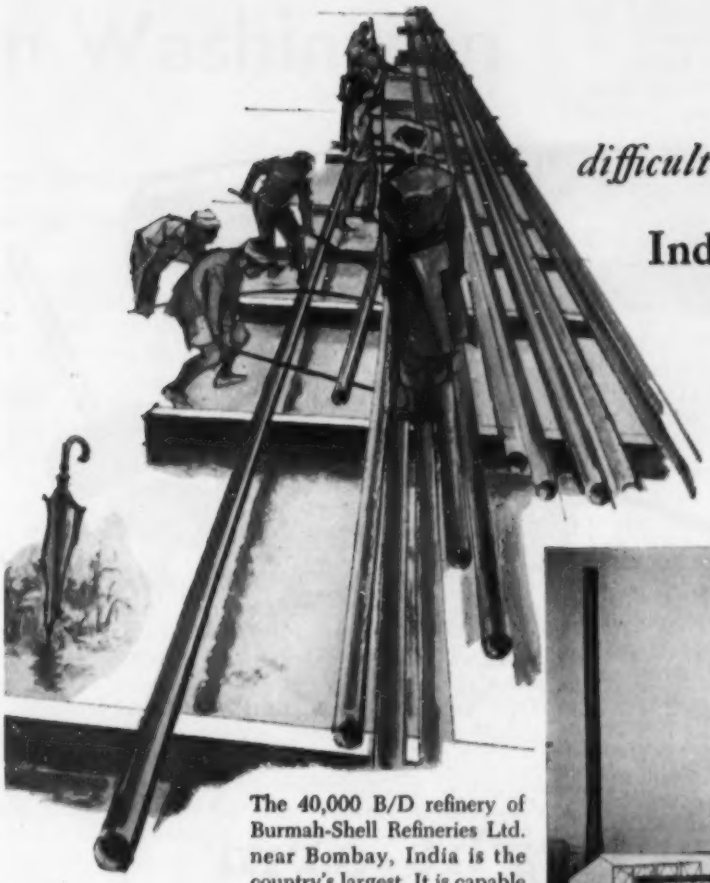
With insurance company coverage shaping up as considerably less than atomic power people want, even some insurers now concede that government assistance is needed.

• **New Law, New Problem**—The Atomic Energy Commission heretofore has indemnified its contractors for liability arising from use of fissionable materials. That took care of the situation until 1954, when a new Atomic Energy Act was passed by Congress to permit private ownership and operation of atomic plants. The new law stated that AEC would assume no responsibility for private plants—this despite the fact that fissionable fuels can be obtained by industry only from the commission.

Ever since the law was changed, AEC has been urging industry to participate in atomic power development.

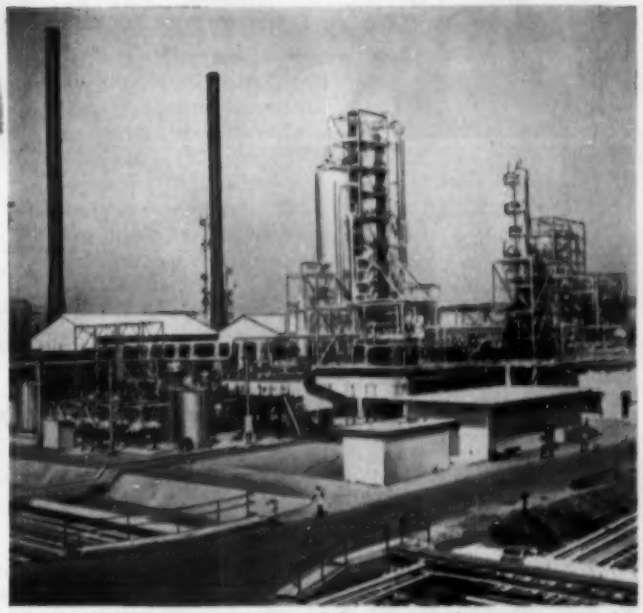
• **Change of View**—But neither the commission nor Congress looked favorably on government insurance for atomic plants until recently. In fact, just last January a civilian study group set up by the Joint Congressional Committee on Atomic Energy reported that private industry probably could handle atomic insurance requirements (BW—Feb.4'56,p31).

This report set off a storm of protest among equipment makers and utilities. The protests had effect. The Joint Committee now is considering legislation that would limit the liability of plant owners and their equipment suppliers, as well as a measure to provide government insurance over and above the amount of private coverage available. END



*difficult physical conditions, but...*

# India's largest refinery was completed a year ahead of schedule



The 40,000 B/D refinery of Burmah-Shell Refineries Ltd. near Bombay, India is the country's largest. It is capable of supplying an estimated half of India's current requirements for finished petroleum. Although built in the face of difficult physical conditions, close cooperation with the owner in planning and engineering, and exceptional coordination of construction allowed Lummus to finish almost a year ahead of the original schedule.

A smoothly running refinery now, consisting primarily of crude distillation, fluid catalytic cracking, gas recovery, treating and blending units, offsite facilities and utilities, at the start it was only 450 acres of incredibly difficult terrain, without roads, railway or harbor.

Battling two of Bombay's worse monsoons, Lummus employed as many as 14,000 Indians at peak periods. Terrain was filled and drained. Roads, rail lines, harbor facilities, and the complete refinery were constructed. The job was kept moving *ahead* of the timetable – and finished 21 months from the start of construction.

A project of this magnitude requires a worldwide organization of experienced engineers and construction men able to cope with any problem. Lummus is such an organization and can design and build your next plant whatever the size, type or location.

The Lummus Company, 385 Madison Avenue, New York 17, New York. *Engineering and Sales Offices:* New York, Houston, Montreal, London, Paris, The Hague, Bombay. *Sales Offices:* Chicago, Caracas. *Heat Exchanger Plant:* Honesdale, Pennsylvania. *Fabricated Piping Plant:* East Chicago, Indiana.

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# In Washington

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## Two Congressmen Go Gunning For Tax Refunds to Business

Business claims for some $500-million in tax refunds will go out the window if two top tax Congressmen get approval of legislation they introduced this week.

**Rep. Wilbur D. Mills (D-Ark.) and Rep. Daniel A. Reed (R-N. Y.)—and the Treasury Dept., too—want to reverse a 1954 U. S. Court of Claims decision.** The court awarded General Motors' Frigidaire Div. a tax refund on its costs for parts and services given to consumers under repair or replacement warranties. **The court laid down the rule that a company paying an excise tax on any article sold with a warranty can claim a refund later on what it pays out in fulfilling the warranty.**

After the decision, hundreds of similar refund claims were quickly filed. The biggest claim of all was another one recently filed by GM—asking an $8.5-million refund on truck and automobile warranties. **Similar "Frigidaire case" claims have been made in court by a long roster of industrial leaders—including General Electric, Westinghouse, American Motors, Philco, Eastman Kodak, Borg-Warner, and others.**

The proposed legislation introduced by Mills and Reed would provide that any warranty automatically included in the selling price of an article is subject to the excise tax, if the article itself is taxable—and that no tax refund is available for expenses under such a warranty.

An earlier attempt to upset the Frigidaire ruling failed in a House Ways & Means subcommittee early this year. Mills wants to bring the new proposals before the full Ways & Means Committee—where he and Reed exercise strong personal influence.

• • •

## Supreme Court Takes On New Offshore Oil Dispute

The Supreme Court this week finally consented to take on the offshore oil dispute between the federal government and the State of Louisiana. The question is how far out into the Gulf of Mexico Louisiana has title to submerged oil and other natural resources.

The Submerged Lands Act of 1953, sponsored by the Eisenhower Administration, recognized states' rights as far as their "historical" boundaries. **The government says Louisiana's historic boundary is three miles out—the same as for most other states. Louisiana insists it's three leagues—or 10.5 miles—from its low water line. That's the limit the Administration recognizes for Texas.**

Earlier this term, the Justice Dept. asked the court for a simple declaration confirming the three-mile coastal limit for Louisiana. The court rejected the request, since it was based on the court's 1950 decision that the federal government then had paramount rights to all off-shore oil lands. This decision was superseded by the new legislation in 1953.

Another law passed in 1953—the Outer Continental Shelf Lands Act—gives the federal government mineral rights to submerged resources beyond the state limits, and extending to the edge of the continental shelf.

• • •

## O'Mahoney, Subbing for Kefauver, Prods Antitrust Group to Action

The Senate antitrust subcommittee, which sputtered along under chairmanship of the late Sen. Harley M. Kilgore (D-W.Va.), shows new signs of activity under Sen. Joseph C. O'Mahoney (D.-Wyo.), who has moved in as acting chairman.

**One thing O'Mahoney is understood to have his sights fixed on is an early investigation of meat industry pricing practices.** He's also likely to pull out for another look some legislation that has been resting quietly in the pigeonhole during Kilgore's chairmanship. One of these bills would require advance notice to the government of intent to merge. Another would put bank mergers achieved by asset purchase under the same restrictions the Clayton Act applies to all others.

**Actually, O'Mahoney is outranked on the subcommittee by Sen. Estes Kefauver (D-Tenn.), now busy campaigning for the Democratic Presidential nomination.** If and when he has the time for it, Kefauver can take over the chairmanship—but that's not likely during this session.

Another antitrust move came this week from Sen. Hubert Humphrey (D.-Minn.). He offered a bill proposing punitive measures against corporation officials who authorize acts that lead to criminal antitrust violations.

• • •

## House Committee's Frown Turns Negotiated Sale Into Auction

General Services Administration this week called off its plans for a negotiated sale of a government-owned foundry at New Castle, Pa., to United Engineering & Foundry Co. of Pittsburgh.

Instead, said GSA, the plant will be sold at competitive auction in Washington on Apr. 20. United Foundry had offered $7.5-million for the 15-building plant.

GSA's abrupt about-face apparently resulted from a challenge by the House Committee on Government Operations.

**The House group asked for legal justification for the sale, in view of the expiration last June of GSA's statutory authority to make negotiated disposal of surplus properties.**

The plant cost $22-million in World War II, including $18-million for machinery, records show. A Congressional source said one reason for the House Committee's objection was a proposal to exempt 173 of 215 pieces of "pretty good" machinery from national industrial reserve status and give United immediate title.

Matthew H. McCloskey, treasurer of the Democratic National Committee.

J. Clifford Folger, chairman of the GOP National Finance Committee.

**● You can give up to $5,000 in any calendar year to any candidate, or to a committee for a candidate, or to a national committee.**

**● There is no federal or state limit on your total contributions; you can give $5,000 to as many different candidates or committees as your checkbook can stand.**

**● You can make the contribution in cash, if you prefer, but the general practice is to give by personal check.**

**● If it can be proved that you tried to influence a vote through your contribution, you can be both fined and imprisoned.**

**● Corporations, labor unions, and national banks cannot make political contributions. But their officials and members can give as individuals.**

**● No political committee can receive or spend more than $3-million during a calendar year, and there is a limit of $5,000 on transfer of money from one committee to another.**

**● You don't have to report your donation, but if it is over $100, the committee that received it is required to report it.**

# Paying for a $75-Million Show

THE SPOTLIGHT is on campaign contributions this election year as never before. This is inevitable after the furor created in the U.S. Senate over the attempted $2,500 contribution to Sen. Francis Case (R-S.D.) during the debate on the natural gas bill.

The special committee headed by Sen. Walter F. George is about to file its report on lobbying activities that were disclosed during debate on the natural gas legislation. As soon as this report is in, a new select committee headed by Sen. John McClellan of Arkansas will launch into a broad-scale probe of lobbying.

The activities of labor unions, and corporations, and any others who attempt to influence legislation improperly or illegally through campaign contributions, political activities, or lobbying will be aired when the McClellan committee gets to work. Political efforts of oilmen will come up first.

• **Sound and Fury**—Whether Congress enacts any new legislation this year—and the prospects are it will not—the fury over contributions has the political fund raisers worried that it may dry up contributions from businessmen who don't want publicity over donations.

The fund raisers will argue that if the contributors will follow a few simple ground rules (table), they have nothing to fear. Any substantial cutback in contributions could be rough on both parties, for the 1956 campaigns stand to be the most expensive in history. Party fund raisers such as Commerce Secy. Sinclair Weeks estimated the 1952 elections cost $40-million to $50-million. With television playing an even bigger part this year, the 1956 election could run to $75-million.

• **Sources**—Where will this money come from? It isn't possible to diagram all of it, but it is possible to get a broad picture of the sources.

The big starter in the fund drive are the $100-a-plate dinner—the Lincoln Day dinners of the Republicans, the

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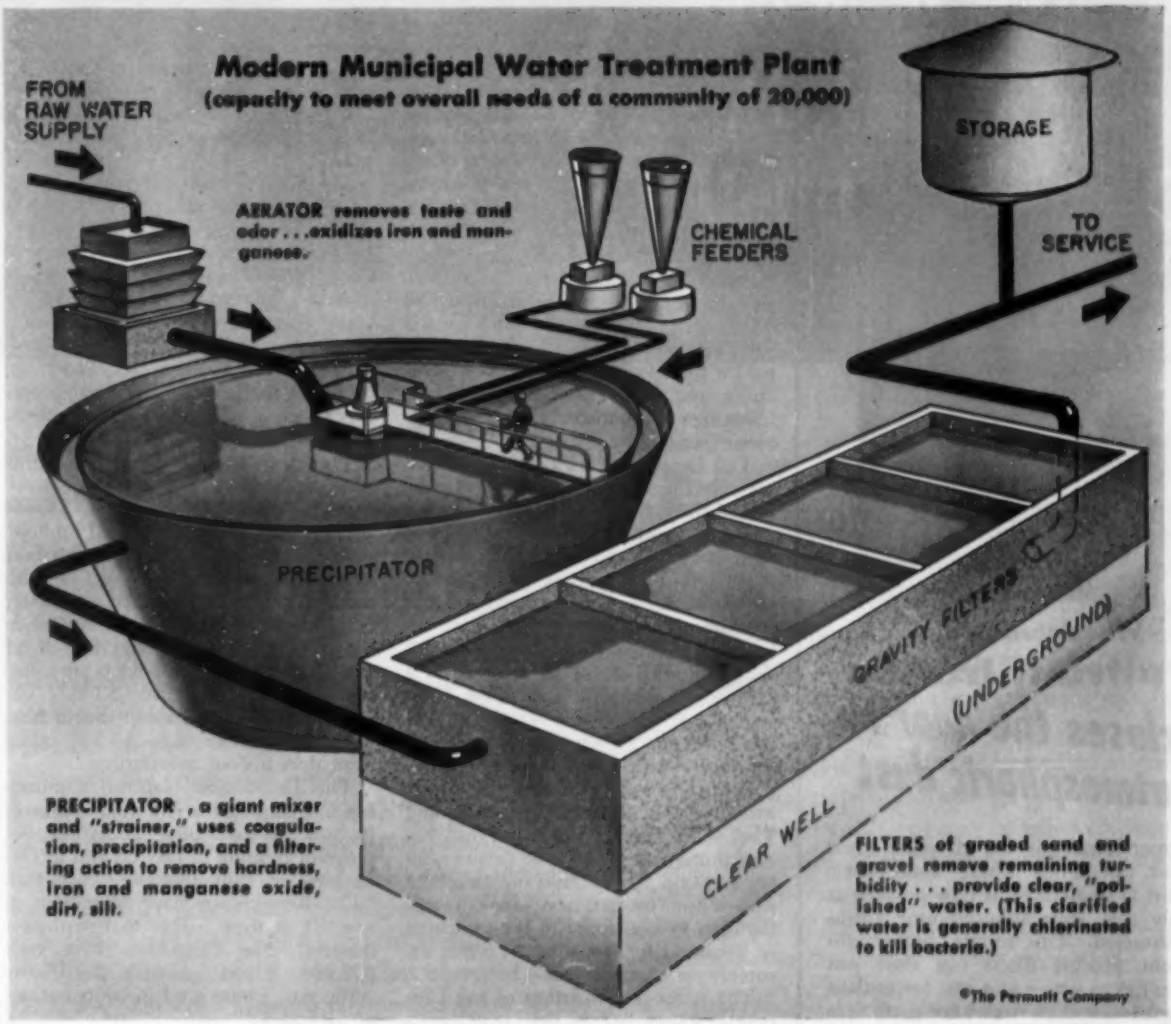
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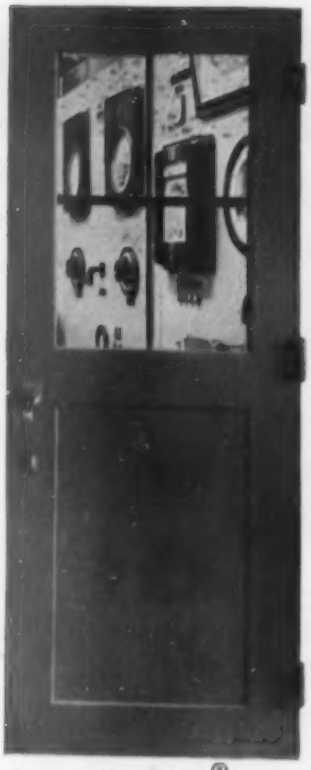

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Jefferson-Jackson Day dinner of the Democrats.

The Republicans netted $3.5-million with their Salute to Eisenhower dinners in February. The Democrats will have several dinners during the year, but their big one will be in Washington on Apr. 21, and they hope to net at least $350,000 from it.

From then on during the year, both parties will go to work on their broad-scale fund drives. The Republicans have a united drive with national, state, and local committees cooperating. Each state has a quota to raise and it retains its share and sends the rest to the National Committee in Washington.

• **Budgets**—The GOP National Committee budget this year is $7-million, with this breakdown: $3-million for the National Committee, $2.7-million for the Congressional Campaign Committee for the Election of GOP Representatives, and $1.3-million for the Senate Campaign Committee to Help Senatorial Candidates.

The Democrats, who are not so well organized in their fund raising, eye the united drive enviously and bemoan the fact that the Republicans have trained their people to give regularly.

• **Targets**—Both parties go after the big contributors first. In some areas it is as simple as a finance committee sitting down and setting assessments for the big contributors. It operates on a first-name basis with Bill calling Herb and saying: "Herb, old boy, we've got you down for $4,000 this year. Try to get your check in as soon as you can."

Politicians see nothing ethically wrong with that type of contribution. They see a vast difference between the contribution from any one person who gives toward the election of candidates who reflect his political ideology and the offer to contribute to the campaign of a candidate providing he votes favorably on a certain bill.

The latter is a violation of the Corrupt Practices Act in that it attempts to influence legislation and subjects both donor and recipient to fines and imprisonment.

Neither party is too happy with having to depend on big contributors. In the Midwest, some of the big GOP contributors say they, too, are ready to spread the campaign load. They point out that they contributed substantially to Taft and then to Eisenhower in 1952. This year they would like to let the "tweedy set and do-gooders take the rubber bands off their checkbooks."

The Democrats talk so much about Republicans having the big business money sewed up that the impression is created that most Democratic contributions come in in the form of $5 and $10 sweat-stained donations. Actually, both parties get to the well-heeled businessman. While undoubtedly the Republicans have the edge, the Democrats get a sizable chunk.

• **Drives**—Most Democratic money now is going into the Presidential primaries and the National Committee won't see much of it until after the convention. Right now, Stevenson and Kefauver are getting most of the money available. None of it comes from official party organizations, since neither has official sponsorship at this point and they must do their own financing. Both have their own fund-raising operations.

Stevenson's well organized drive doesn't depend on big contributors alone. All who gave over $100 in 1952 are contracted personally by people who know them. That is so that someone who is good for 50 tickets to a $100 plater doesn't get off with buying only two tickets. In checking on 1952 contributors, the Citizens for Stevenson operation in New York ran across contributions of $1,000 from chauffeurs and maids.

• **Potential**—Stevenson's fund-raising plan to make a big pitch for small contributions. This stems from a Gallup poll survey indicating that 15-million people would be willing to contribute up to $5, if asked. To get at this money, Stevenson's finance committee is launching a campaign on Apr. 7 in the form of coupon books full of $1 and $5 coupons. The booklets are called "Steve's" and are spelled "STV." The plan already has had a test run in New York with better than $3,500 raised from door-to-door solicitations.

The Democratic National Committee has launched a TV fund raiser of its own. It has a pilot, 20-second spot program running in Dayton and in Des Moines. It runs something like this: "The Republicans have $5-million as a result of their Salute to Eisenhower dinners. The Democrats have only $75,000. If you believe in the Democratic way, please send in contributions of $1 and $2."

Contact with fund raisers is more apt to be at the local level, and may take the form of a letter sent out by a Democratic Congressional candidate in Montgomery County, Md. It runs something like this: "You know that candidate X is running for the nomination and I know you will vote for him in the primary on May 7. But it is not quite that simple . . . It takes money to elect even a good man . . . We would like to hear from you . . . Please give as much as you can." The letter is signed by the finance chairman of the candidate's committee.

• **Limits**—What are the state laws affecting contributions? There are no limits on individual contributions, but all save 13 states put a limit on what candidates can spend either in primaries or in general elections. It ranges from

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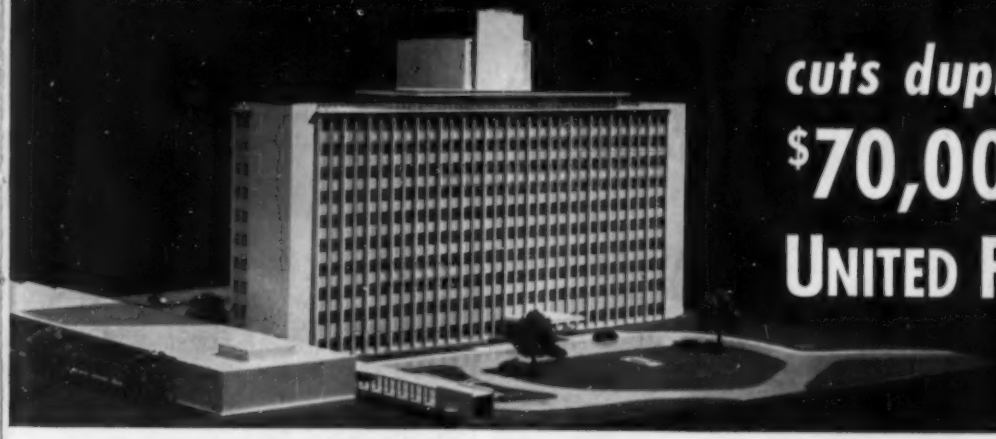

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$3,500 in Arizona to $60,000 in Oklahoma. Eight states—Washington, Utah, Texas, North Carolina, South Carolina, Pennsylvania, Nebraska, California—have no ceiling on spending but require financial reporting from candidates. Five states—Delaware, Illinois, Louisiana, Nevada, Rhode Island—have no limit and require no reporting.

Although there is a $5,000 limit on what a person can give to one candidate or to a single committee, the well-heeled donor has little trouble getting around it. He can always give in his wife's or child's name.

• **Side Doors**—The Corrupt Practices Act bans gifts by corporations and labor unions. However, there are ways to get around these federal prohibitions. Top management people can sometimes get special bonus arrangements or unquestioned expense accounts that enable them to make substantial donations.

Sometimes large companies that lean toward a political party will lend a man to the party for the campaign or may assign him to raise funds.

At recent Congressional hearings, Allen W. Merrill, personal assistant to Henry Ford II, acknowledged that he spearheaded the drive for Eisenhower funds among Ford dealers in 1952.

General Motors Vice-Pres. William F. Hufstader told the same committee that he called six GM dealers in Wayne County, Mich.—representing the six GM lines—and asked them to solicit funds from Wayne County leaders for the Republicans. He reported one dealer refused and added that the dealer is "still with us."

In Pittsburgh, the Mellon interests are reportedly represented by Arthur Van Buskirk, one of the top officials at T. Mellon & Sons (a sort of family holding company). Van Buskirk has the assignment of handling the family's political contributions.

A multi-plant industrial company in Pittsburgh keeps in touch with the recognized GOP committees in its plant towns, gets cards for registered Republicans who are in its employ and solicits them. It concentrates on national elections—Congress and the Presidential campaigns. It does not solicit Democrats or Independents.

• **Labor's Plan**—The unions, too, have found a way to get around the ban on use of union dues for political use. They spend their money to "educate" the public—through TV and radio program and newspaper ads. As a general rule, little union money finds its way directly into party coffers. The unions prefer to keep their fingers on the expenditure of funds. Even the AFL-CIO Committee on Political Education prefers to spend its funds for getting out its members to vote rather than turn it over to the local party organization. END

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IBM'S EXPANSION in Britain has taken the company from a modest home (left) in Scotland to a big modern plant (right).

# U.S. Companies in Britain Set a

LISTEN to a discussion on the importance of U.S. private investment abroad and the chances are it will focus on the underdeveloped countries—as though these countries were the only ones where U. S. capital could make a contribution to economic growth.

But take a close look at the British economy today and you will find that private American investment can work miracles in an old industrial country, and turn a handsome profit to boot. This British story is as dramatic as almost any in the history of U. S. business operations abroad.

## I. The U.S. Wallop

The story starts before World War II. Many U.S. companies set up branch plants in Britain in the 1930s to take advantage of the opportunity to develop newer industries there and to export from behind the Imperial Preference screen that had been established in 1932.

It's especially since 1945 that American industry really has put some of its own wallop into the British economy. It was not drawn into the shaky postwar British economy by any philanthropic motives; aim was to get behind the curtain of "dollar shortage" restrictions so as to (1) sell in the British market, and (2) supply from the British base many other markets where U.S., but not British goods, have been restricted.

The charts on the opposite page tell part of the story—how U. S. investment in British industry has climbed, how output and exports of U. S. companies (defined as U.S. branches plus United Kingdom companies with 25% or more U. S. equity) have shot up. But there is far more to the story than that.

• **Summing Up**—To get it all—the figures for the charts, other basic statistical material, and an appraisal of the impact on British industry as a whole—BUSINESS WEEK drew on the research of Prof. John H. Dunning, an economist at the University of Southhampton (England), who soon will publish a book, American Investment in British Manufacturing Industry. Dunning spent two-and-a-half years on this study, sponsored by the British Board of Trade and partly financed out of counterpart funds provided by the U. S. under the Mutual Security Act of 1948.

• **Company Tally**—There are some 800 U.S. companies operating in Britain today—in dozens of lines of business from autos and oil refining to cosmetics and chewing gum. Since 1945, they have invested roughly $1-billion, the bulk of it by plowing back profits made in Britain. After allowing for some repatriation of capital, this postwar investment has brought their net investment close to $1.4-billion, or to about 7% of all U.S. direct investments overseas.

In British manufacturing industry (including oil refining) there are 250 to 275 U. S. companies. They account for 75% of the total investment which, in turn, is highly concentrated (box, opposite page). On an average, an American factory employs 850 workers, seven times the average number in a British establishment. The only really big investment outside manufacturing is Woolworth, which—next to Esso—is the biggest single U.S. holding in Britain.

• **Profitable**—For most, if not all, U. S. companies doing business in Britain is a profitable proposition. It returns an average 16½% on capital invested, though not all profits are remitted back to the U.S. In 1954, the total remitted was $109-million ($80-million from manufacturing and petroleum) and the total plowed back in Britain was slightly more than this figure. A good guess for 1955 remittances would be $120-million.

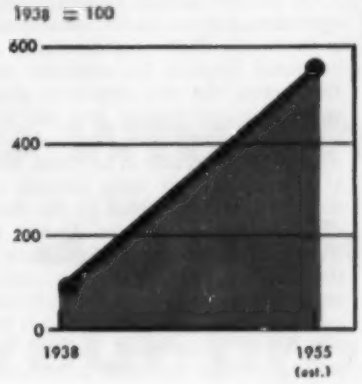
## II. Off the Beaten Track

It is interesting to note that there is little or no U.S. capital in the traditional fields of British industry—cotton and woolen textiles, iron and steel, shipbuilding, and coal. The same goes for the "brand new" industries such as atomic power, aircraft, and electronics (except in instrumentation)—industries that the U.S. and Britain now are developing side by side.

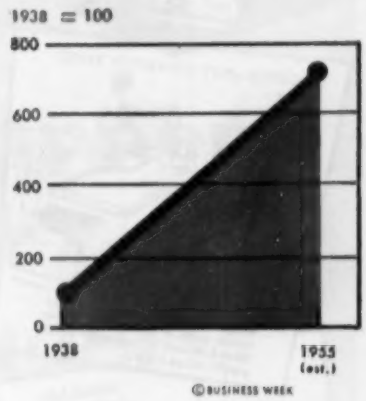
U.S. investment is heavily con-

**U. S. Investments in Britain, Mostly in manufacturing, are well past billion mark.**

**Production of "American Goods" in Britain is five times higher than prewar.**




**Exports from Britain by U. S. branches play a big part in boosting British trade.**




# Faster Pace for an Old Economy

centrated in what the British call newer, as against the brand new, industries. Looked at from the supply or cost side, it is concentrated in those industries where (1) mass production techniques are utilized; and (2) research is above average importance.

• **U. S. Pattern**—From the demand or market side, the concentration reflects the way the British economy has been following the pattern established in the U. S. a generation ago. In recent years, high labor costs, full employment, the need to replenish capital depleted during World War II, and great technological advances have combined to increase the British demand for capital goods that the U. S. economy has been utilizing for many years. On top of that, you have the growth of a mass consumer market in Britain, bringing with it a growing demand for such products as autos, refrigerators, cosmetics, modern kitchenware.

• **Postwar Market**—In prewar days, British demand for these newer-type capital goods and consumer goods was filled mainly by imports from the U. S. After World War II, the dollar shortage blocked Britain's access to American-produced goods. At the same time, British industry had neither the experience nor the capital to develop and satisfy the local market or that in the sterling area—both of which previously had been supplied by imports.

That's why U.S. companies, encouraged by the British Board of Trade, have expanded their prewar facilities in

## Fact Sheet on U.S. Companies Manufacturing in Britain

In 1955, they employed about 4% (300,000) of Britain's factory workers, produced 6% of Britain's total manufacturing output (almost $2.5-billion), and provided 10% of Britain's total sales abroad ($840-million).

U.S. investment is highly concentrated. The 10 largest U.S. companies (in terms of assets): British United Shoe Machinery, Esso, Ford, Goodyear, Hoover, Kodak, Mobil Oil, Monsanto, Standard Telephones & Cables, Vauxhall (GM). Over-all, these 10 employ more than 100,000 people, account for 60% of the U.S. investment in manufacturing.

U.S. companies divide their attention (by number of workers) this way: heavy manufacturing, 32%; motor vehicles, 24%; chemicals (including oil refining and pharmaceuticals), 13%; industrial and scientific instruments, 7%; food, drink, and tobacco, 7%; electrical products, 6%; miscellaneous, 11%.

U.S. companies account for a big percentage of total British output in many lines:

Over 75%: synthetic detergents, movie films, boot and shoe machinery, sewing machines, printing machinery and equipment, carbon black, processed breakfast foods.

Over 50%: cash registers, typewriters, cameras, farm tractors, oil drilling equipment, pneumatic tools, elevators, domestic heating appliances.

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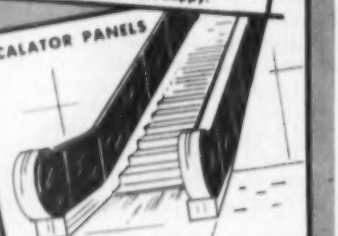

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Britain or moved into British industry for the first time. Between 70 and 80 new U. S. companies have moved into Britain since 1945, bringing American knowhow in many fields. But most of the postwar expansion—75% in terms of the increase in employment—has come from businesses established before 1945.

Of the new branch factories now in operation, half are in the development areas (South Wales, mid-Scotland, and northeast England for example)—areas that before the war depended almost entirely on coal mining, iron and steel, and shipbuilding. In these development areas, especially in Scotland, many U. S. companies are using factories and service facilities provided by the Board of Trade at very low rates. In fact, the BOT has spent over $150-million in the past five years on this job—provoking members on a parliamentary committee recently to suggest that it is time the British government stopped subsidizing wealthy American corporations.

• **Britain Gains**—In a recent article in the District Bank Review (of Manchester), Dunning sums up Britain's advantages, tradewise, from the American industrial invasion of Britain—counting, in this case, British firms manufacturing under American license as well as U. S. subsidiaries and joint Anglo-American enterprises. Here are some of his findings:

Of the "American goods" consumed in Britain today, 80% are made in Britain. By taking a group of industries of "recent origin" in which American influence is marked, Dunning shows that (1) before the war, some 70% of these products was imported, mostly from the U. S.; and (2) except for refined oil products, Britain is virtually self-supporting today in these goods, and actually is exporting 30% of its production.

• **Exports Up**—What's more, Britain's share of world trade in the newer industrial products has expanded phenomenally. In 1938, Britain exported only 3% of what the U. S. sold abroad in these goods. By 1954, the figure had risen to 40%.

As for the direct contribution of U. S. companies to Britain's exports, that's out of all proportion to the size of the American investment in Britain. In 1955, U. S. firms exported about £300-million (about $840-million) worth of goods from Britain, as against £35-million to £40-million in 1938.

Average exports of U. S. firms are well above the average for British industry as a whole—in spite of the fact that about one-third of the U. S. companies involved have other overseas manufacturing units besides those in Britain. There is increasing evidence that parent companies in the U. S. rely on their British subsidiaries to supply the entire world market outside the U.S. In many cases, far more is exported from the British subsidiary than from the parent company, notwithstanding the fact that the latter is usually five to 10 times larger.

Some U. S. firms, in fact, concentrate their production of certain items exclusively in Britain. The entire world supply of the Remington Rand noiseless typewriters, for example, is manufactured in the Glasgow factory of this firm's British subsidiary. A range of calculating machines for world distribution is made by Burroughs at its Vale of Leven factory in Scotland. Hoover (U.K.) produces the entire output of that company's electric washing machines, and exports a large number to the U. S. each year. Singer produces a variety of sewing machines in Britain solely for the U. S. market.

There are other examples of British-made goods being exported back to the U. S.—things like specialized machine tools, industrial instruments, starch products, and glassware. In the case of office machinery, the U. S. is Britain's biggest single market. One U. S. radio subsidiary earns more dollars for Britain than any British-owned radio firm.

• **Reverse Twist**—In some cases the British companies that supply U. S. subsidiaries with components and raw materials are now exporting these products to the parent companies in the U. S. In this category are high quality steel strips, steel castings, plastic components, and electronic components.

## III. How Costs Stack Up

When it comes to costs and productivity, Dunning has uncovered a mixed picture. It's based on the experience of 150 U. S. firms in Britain. He found that precise comparisons between labor productivity in the British branches and the parent companies are hard to make.

Although British wages average only one-third of American, Dunning found that average production costs aren't much below the U.S.—the median difference being only 15%. According to his sampling of 150 firms, 55% produced more cheaply in the U. K.; 30% about the same; 15% less cheaply, and 10% varies according to the product manufactured. With a fair number of firms it's clear that the economies of a bigger U.S. market more than outweigh the lower wage levels in the U. K.

From 10 firms that have made comparative studies of personal operative efficiency, Dunning found that the average efficiency of a U.K. worker is 95% of his American counterpart, though it varies between 85% and 105%.

• **In Common**—In most cases manufacturing operations in the two countries are basically similar in these

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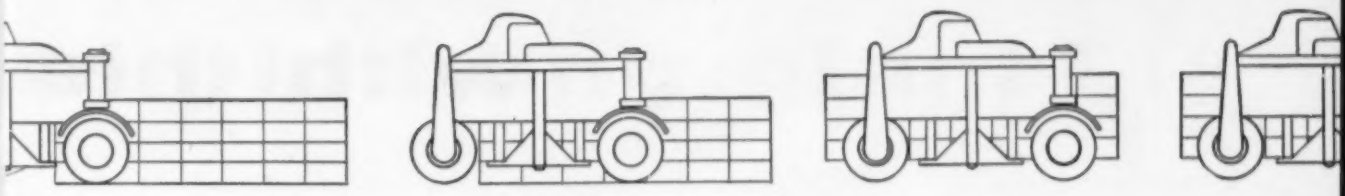

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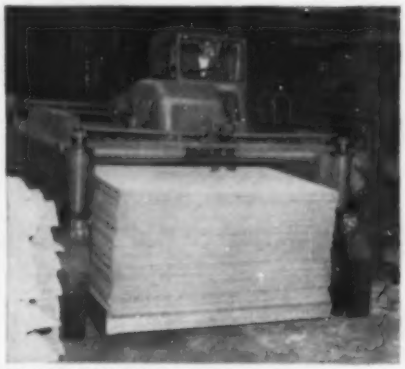

**HOME BUILDING**—*National Homes Corp.*
—key to mass production is mass handling

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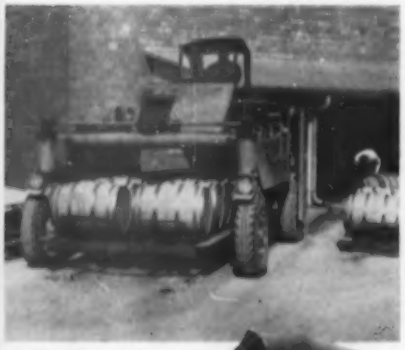

**DISTILLING**—
*Old Grand Dad*
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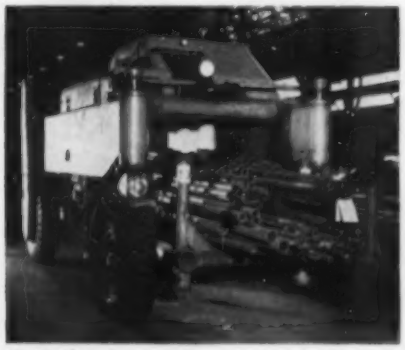

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**STORY starts on p. 132**

respects: (1) Identical or nearly identical products are supplied; (2) full access is available to the parent plants' know-how in research, manufacturing, and management; and (3) the management attitude toward production in the U. K. plant is "American," though only one of eight U. S. branch plants are run by U. S. nationals.

• **Differences**—There are two big differences, however, and these largely explain the differences in productivity and manufacturing methods.

First comes the size and nature of the British market. In general, average output of U. S. factories is between five and 10 times that of the U. K. branch plant. Volume differences are especially marked in autos, tires, pharmaceuticals, radios, industrial instruments, office machinery, and machine tools. It's only in domestic electric appliances, food and drink, synthetic detergents, petroleum refining, and sewing machines that production volume is reasonably comparable. This means that there is less chance for standardization in Britain. Also, more attention has to be paid to export markets with peculiar requirements, which means that the percentage of "setting up" to "running" time is often 10 times as much in the U. K.

Then there is the difference in relative cost structures. With U. K. labor costing one-third of U. S. labor, you find cases where it pays to mechanize in the American plant while it pays to use labor in the British plant. In probably two-thirds of the cases, where labor costs are a small percentage of the total cost, this doesn't make much difference and manufacturing methods are basically the same. But marginally it can make a difference. For example, in Britain there is less mechanical handling, less mechanized packaging, and less office machinery in use. In general there are fewer specialized machines in Britain and more general-purpose machines. What applies to machinery also applies to management specialization.

Here are some other factors that affect costs and productivity:

• **Machine utilization:** definitely less in the U. K.

• **Labor quality:** mostly satisfactory except for the supply of industrial engineers and properly trained foremen.

• **Attitude to work:** Most firms agree that British operatives work as hard as American but not so effectively,

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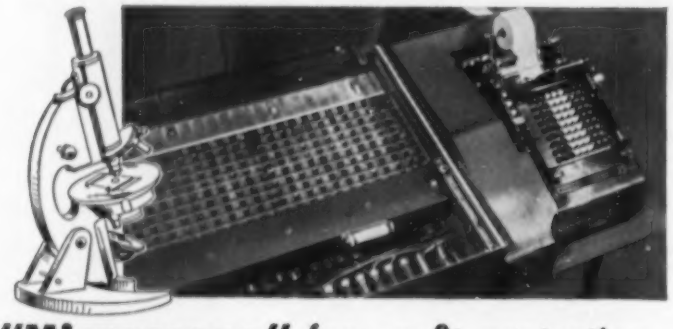

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partly because they require more supervision and partly because the one-man one-machine philosophy still prevails in Britain.

• **Materials difficulties:** Lower quality of material supplied, which forces British industry to keep larger inventories than American industry.

• **Lack of experience:** In some U. S. branch plants—evident especially in those established since 1945—productivity per head often averages only 75% to 80% of the U. S. level.

### IV. Impact on Industry

There is no question that U.S. companies have had a tremendous impact on British industry as a whole. In a number of industries they have injected a much needed element of competition—for example in soap, tires, domestic boilers, printing equipment, clocks, and matches. In more than one case they have put a cartel out of business.

Their ability to draw on the research and manufacturing experience of the parent company has been especially important. The parent companies of the largest 25 subsidiaries in the U. K. spend more on research each year than does private British industry as a whole. On top of that, they can draw on the latest American management methods and infuse the dynamic attitude of U. S. management into the slower-moving British industrial pattern.

U. S. subsidiaries generally act as an American firm would. Some 20% of them are strongly controlled in their decision-taking by the parent company. Another 55% are partially controlled, but in all major respects employ U. S. managerial methods. Only 25% run independently of their parent firms.

• **Price Conscious**—The competitive urge of the U. S. firms makes them more price conscious than their British counterparts. For example, Ford, Gillette, Hoover, Heinz, and Bakelite all have raised their prices over the last 10 years by considerably less than the average for their industries as a whole. The price factor, plus higher quality in some instances, shows up in the fact that the market share of U. S. subsidiaries has been increasing over the years. Dunning asked his sample of 150 firms this question: "Has your share of total output increased, decreased, or remained constant since 1939?" Some 57% replied "increased," 34% "remained constant," and 9% "decreased." The U. S. share has gone up most rapidly in motor cars, refrigeration, food and drink, office machinery, tires, soap, and razor blades.

• **Standards**—U. S. companies have exerted a powerful influence on their British suppliers. Purchasing standards are much more stringent on the average. One British supplier to a big U. S.

# "In MOA our biggest customers are right around the corner"

● **An interview with William J. Prudler, Vice President in charge of Oakland Plant, NATIONAL CONTAINER CORPORATION**

Q. *Mr. Prudler, the West is now growing twice as fast as the rest of the country. As a Western branch plant manager of six years' experience, do you have any advice for businessmen who would like to share in the profits of this great expansion?*

**Mr. Prudler:** My advice would be to do as we did—choose a fine central location like the Metropolitan Oakland Area (Alameda County), move in and go to work. We came out here in 1939 and are now permanently established in a large, modern plant the Port of Oakland built expressly for us.

Q. *Isn't it rather unusual for port authorities to build a manufacturing plant?*

**Mr. Prudler:** Not in MOA, where all-out cooperation with new industry is standard operating procedure. On a national scale we are America's third largest producer of corrugated shipping containers. The Oakland Plant of National Container Corporation uses thousands of tons of paper a year. We get a large percentage of the paper for our MOA plant by ship—it comes in huge 1 to 2½ ton rolls—

and since we are such an important user of port facilities, the Port of Oakland authorities actually built a plant to our specifications, which we lease. The local people really treat business well in MOA.

Q. *I suppose you also mean by this that they buy your boxes?*

**Mr. Prudler:** Our Oakland plant supplies Washington, Oregon, Idaho and Northern California, yet we sell more than half of all our boxes locally. MOA is now the West's second largest market and many of the nation's biggest companies have branch plants in our immediate vicinity. It's nice to have most of our biggest customers right around the corner.

Q. *Do these customers represent any particular category of industry?*

**Mr. Prudler:** No, we supply just about everyone, large and small. We make boxes for everything from gas furnaces to sliced meat to fragile electronic equipment and TV tubes.

Q. *Your plant, then, must have its own designing department?*

**Mr. Prudler:** Yes, it is entirely self-contained. And that brings up another point in favor of doing business in MOA. We are constantly experimenting to find new ways of improving our product. We have to change and redesign our machines nearly every week. It takes highly skilled men to do this and it's easy to find such men in this area. As a matter of fact, I feel that the West has the most highly intelligent and resourceful workers in the nation.

Q. *Do you feel that the mild climate has anything to do with the unusual productivity of labor here?*

**Mr. Prudler:** Most definitely. We live out-of-doors in MOA almost the whole year 'round. Outdoor living means better health and less absenteeism.

Q. *Companies doing business in MOA are always expanding. How does your company keep pace with this great industrial growth?*

**Mr. Prudler:** We made our plans for expansion when we first came West by arranging for a great deal of extra space. Last year, for instance, when we increased our production considerably, we simply moved into unoccupied parts of our factory. There was no confusion and no loss in working time. We expect another big increase in production this year and we are all prepared for it.

Q. *Would you care to give any specific figures concerning your production, Mr. Prudler?*

**Mr. Prudler:** Last year, our production in square footage of corrugated board in our Oakland plant was enough to make a box to contain many large cities. We expect the present progressive trend of this area will again increase our production in 1956 considerably over last year.

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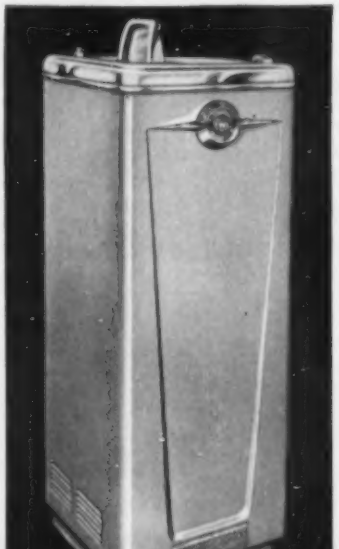

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firm says, "It is the only concern amongst a very large number of our customers which insists that we make to their specification, and meet their necessary standards in all supplies to them." One British industrial instrument firm says, "The impact of U.S. subsidiaries in this industry has been to build up a market in specialized components and to educate both the suppliers and customers in economic advantages of instrumentation."

Not long ago a U.S. consul in Glasgow, describing the early experience of some U.S. companies in the Glasgow area, put it this way: The Americans found that many of their local suppliers of parts and components had pretty shoddy standards—took liberties with specifications, judged by rule of thumb, didn't bother to keep agreed delivery dates. But after a lot of uphill work, in which British-American relations often were strained, the U.S. companies managed to get enthusiastic cooperation in all respects.

Dunning feels that American companies have made an important contribution to British business standards in general. He finds that they don't stop after just examining their own costs but go on to examine their suppliers' costs and their distributors' costs. By doing so, companies such as Ford, Hoover, Ferro Enamels, Kodak, Minnesota Mining, and many others have made a real impact on British industry.

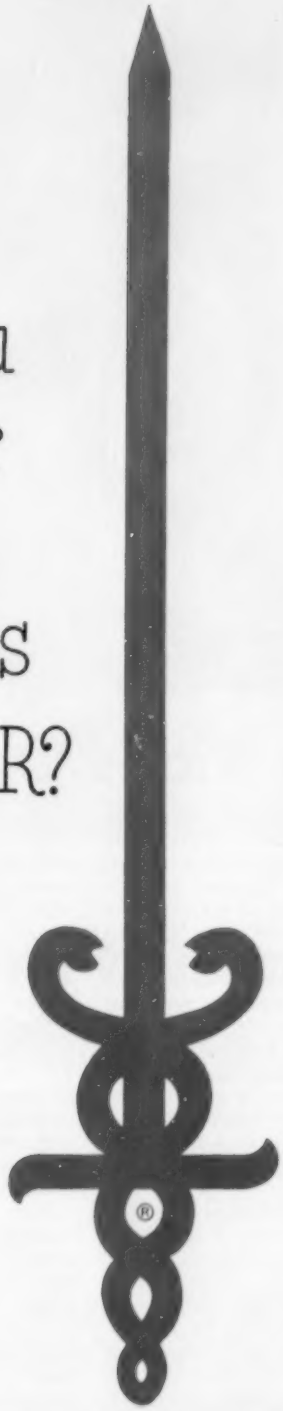
• **Union Model**—U.S. firms also have set the pace in higher wages, paid holidays, and better amenities in their factories, thereby rousing the admiration of British trade unions—and some resentment from British management. Union speakers quite often refer to the efficient management of U.S. firms and hint that British labor would be much more willing to cooperate in raising productivity if British management were equally efficient, businesslike, and "classless."

The British consumer also gets a real break from the presence of so many U.S. companies—mainly through cheaper prices for American goods than if they were imported. Tariffs and transport costs would raise the prices of these goods by an average of 50%, unless U.S. exporters reduced their prices for the British market. Also the consumer gets the benefit of American after-sales service, informative advertising, personal demonstration, and in many cases of higher quality goods.

There can be no doubt of the successful record most U.S. firms have made in Britain. Many are expanding rapidly, highly satisfied with the business they are doing across the Atlantic.

Barring some unforeseen eventuality, the U.S. investment in British industry will continue to grow. END

# Can you answer these questions on CANCER?



*Does CANCER give early warning signals?*

Often it does . . . and much of the progress against cancer is due to the fact that more and more people are aware of signs that may indicate cancer . . . and report them to their doctors promptly. These symptoms, *in the great majority of cases*, indicate some condition other than cancer. For your protection, know cancer's warning signals listed below.

*Why is early diagnosis so important?*

Because it increases the chances of cure. At least 50 percent of all cancers develop in parts of the body which the doctor can easily examine. This is why periodic examinations should not be neglected, especially by women over age 35 and men over age 40. The American Cancer Society estimates that 80,000 lives now lost yearly could be saved through earlier diagnosis and maximum use of present knowledge.

*Are we gaining in the fight on CANCER?*

"There has been progress—fine progress—against cancer." This heartening statement has been made by the American Cancer Society. For one thing, cancer death rates for women between 25 and 75 years of age have declined more than 10 percent since 1944. This means that 10,000 more women are now saved annually than would have been saved in 1944.

*Are there any new "sure cures" for CANCER?*

Not by any means! The only treatments by which cancer can now be controlled or cured are surgery, X-ray and other forms of radiation. Other methods of treatment . . . especially those claimed to be "sure cures" . . . should be avoided. Fortunately, the three accepted ways of attacking cancer are undergoing steady improvement . . . and ever-widening research on cancer holds promise for tomorrow's progress against this disease.

**Cancer's Seven Warning Signals**

1. **Any sore that does not heal.**
2. **A lump or thickening in the breast or elsewhere.**
3. **Unusual bleeding or discharge.**
4. **Any change in a wart or mole.**
5. **Persistent indigestion or difficulty in swallowing.**
6. **Persistent hoarseness or cough.**
7. **Any change in normal bowel habits.**

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# Manila Rides Out Storm

The smiles on the faces of Pres. Ramon Magsaysay and Secy. of State John Foster Dulles (above) as they greeted each other when the Secretary flew into Manila a few days ago on his whirlwind trip through Free Asia weren't just a polite formality. Both Magsaysay and Dulles were happy that the Philippines' president and his country have just weathered a quiet economic crisis.

That crisis could have written finis to Maysaysay's crusade against Communism and corruption in his own country. And Dulles believes that the welfare of the Philippines is one of the most important goals of American foreign policy in Asia.

• **Demand for Devaluation**—Superficially, the crisis that has just ended was an economic one. But its roots were political. For two years Filipino foreign exchange reserves had been diminishing at the rate of $50-million to $60-million a year. Reserves plummeted from $310-million at the beginning of 1954 to about $220-million in November last year.

Powerful exporting interests, led by the Filipino sugar lobby, were pressing for devaluation of the peso—now valued at two to the dollar. Magsaysay's advisers said this would have meant windfall profits for the exporters. They feared devaluation would pour fuel on the already smouldering inflation and compromise the President's economic development program by making it harder to attract foreign investors. And they warned Magsaysay that devaluation would hurt the peasants in the barrio (village) most—the very people who voted him into office two years ago and gave him an overwhelming mandate in the Senatorial elections last fall.

• **Help From U.S.**—Still Magsaysay felt he couldn't stand up to the political pressures alone. He turned to the U.S. Export-Import Bank for help. Two weeks ago Ex-Im came through in record time with a $65-million loan for financing Filipino development projects. And there is more than a hint in Washington that there will be more where that came from when it's needed.

Now, pressure for devaluation has slacked off. The loan should see Manila through the next year without any major economic difficulties. In addition, Magsaysay has saved his reputation. During the crisis, Magsaysay's critics were accusing him of playing a game too close to the Americans. Now he's proved that friendship with Washington pays off.

• **Critical Period Ahead**—Magsaysay's troubles—and Washington's worries about the Philippines—aren't over. The next three or four years will be critical. It will be a period of continued heavy government investment without many tangible returns to show for it. Beyond that, there is the more basic question of whether the planned pace of development will prove fast enough to keep

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up with increasing political pressure for rapid increases in the standard of living. The U.S. almost certainly will be called on to help bridge the gap–and to help quicken the pace if it turns out progress is being made too slowly.

• **Good Credit Rating**–One thing emerged clearly from the scrap over devaluation: The Philippines isn't faced with any basic balance of payments crisis. Manila's credit rating abroad is high. Unlike many underdeveloped countries, it has consistently followed–up until the new loan–a policy of financing its economic development out of current earnings. It still has a cushion of U.S. aid to fall back upon–this year totaling $29.1-million.

The outlook for the immediate future therefore is bright. Washington fully expects that for the next year Manila will be able to hold its reserves stable at about $200-million and that the development program can go ahead on schedule–barring, of course, unforeseen collapse of world markets for sugar, copra, or manila hemp.

• **The Basic Problems**–The real question, though, is whether these development plans are adequate to deal with the Filipinos' basic economic problems effectively enough to preserve political stability.

There are two stubborn basic problems–unemployment, and the low rural standard of living–that can't be solved simply with an Ex-Im loan.

• **Unemployment**–It's hard to say to what extent unemployment is a new problem in the Philippines or to what extent the Filipinos–now freed from the postwar campaign against Communist guerillas–are just beginning to notice it. Estimates vary as to just how many people are jobless. A conservative guess would be 2-million out of a work force of 8.5-million. In addition, there is the usual Asian under-employment in crowded rural areas.

Magsaysay's development program is aimed at solving both these underlying problems. He is encouraging pell-mell industrialization in the cities to soak up the unemployed, and is pushing an ambitious rural development effort.

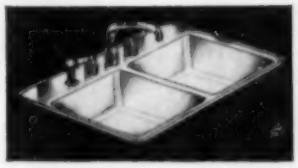
• **Industrialization** – Industrialization has progressed rapidly in the last five years. Industrial capacity in the Manila area alone is up 50% since 1950. Capital is flowing into new plants at an estimated rate of about $100-million a year from all sources.

But the pattern of industrialization has come under heavy fire from some quarters in both Manila and Washington from time to time. The main criticism is that the expansion is taking place in consumer industries–toiletries, notions, pharmaceuticals, and textiles–which aren't nearly so essential as heavy industry.

But Magsaysay's advisers and many

# things have changed . . .

## especially the kitchen sink



Gone is the pump handle . . . the zinc-lined sink . . . and the drudgery of cleaning it. Today's kitchen is a model of efficiency, thanks to modern products made of *stainless steel.*

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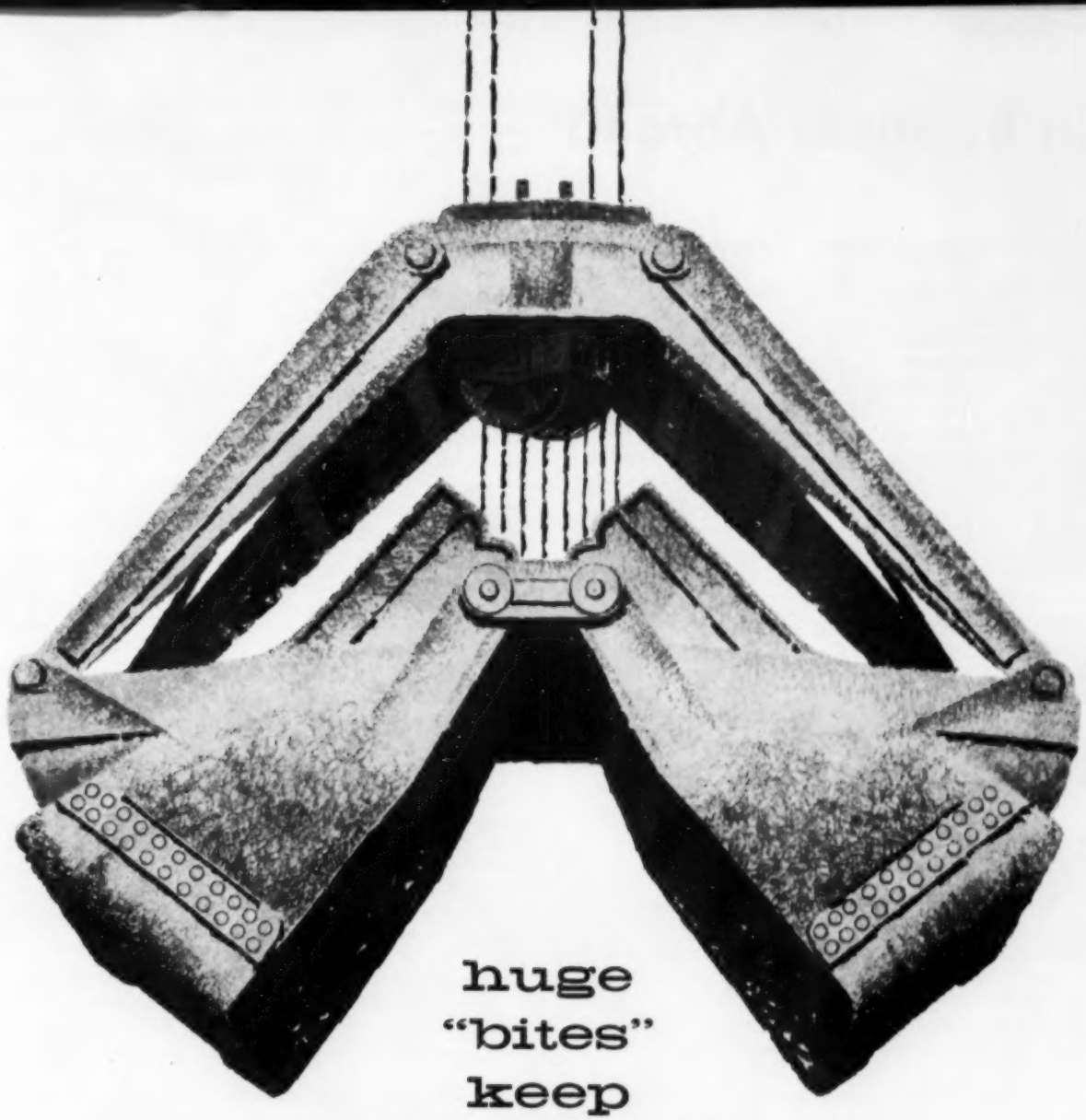
U.S. officials feel an underdeveloped country without an industrial tradition and desperately short of skilled labor and technicians ought to gain experience with light industry before trying to build steel mills. They cite these additional arguments in favor of light industry: Consumer assembly plants can be built fast and create jobs in a hurry. At the same time, they create an effective demand and market for industrial goods. The goods themselves have a morale-building effect that can be politically important.

Meantime, efforts are being made to diversify exports. The Filipinos have some exportable copper and iron and are trying to expand production. More extensive conversion of raw timber into plywood also is being pushed. But by and large, the Philippines probably will have to rely indefinitely upon its traditional exports for foreign income. And there is plenty of competition for these in world markets—particularly for sugar and copra.

• **Rural Development**—The effectiveness of the rural development program is harder to judge than that of industrialization. No figures are available on the costs of the program so far, and about all you can get is a qualitative picture. And the picture is spotty. In the areas liberated from the Huk Communist guerillas you will find completely integrated projects. But practically no progress at all has been made in other outlying areas.

But U.S. officials returning from swings around the country report that the flurry of often uncoordinated activity is beginning to show some results. Thousands of farmers have been resettled on new lands reclaimed from the jungle. Government-backed credit is slowly becoming available, freeing farmers from the grip of the usurpers. Drinking water wells are being drilled and latrines built. The road network has been extended dramatically, financed largely by U.S. defense support aid, breaking the age-old isolation of the barrios and widening farmers' markets.

• **Changing Attitude**—More important, the attitude of the peasant is changing slowly. In the past, he had no contact with the government except with the tax collector. Now government agents are visiting his barrio with increasing frequency to show him new methods, explain his legal rights in his fights with the landlord. He's beginning to get a feeling that maybe someone in the government does care what happens to him. This feeling, if it can be nurtured and extended, will have political impact in the trying years ahead. Magsaysay—the country's first president to come from the barrio himself—is counting on such support to put his long-range program over. END



# huge "bites" keep ore hoppers hopping

To facilitate the dispatch of ore-carrying ocean vessels, and to speed the ore to its destination, larger and more efficient ore-handling equipment is constantly being developed.

At the docks in Mobile, Alabama, for example, this huge 200 cubic foot capacity ore bucket, built by Blaw-Knox, picks up 18½ net tons of South American iron ore at every bite.

It is only one of 21 Blaw-Knox ore buckets of similar size in use at Atlantic and Gulf ports.

These buckets, designed and constructed by Blaw-Knox, are but another example of Blaw-Knox engineering achievements that are increasing production, cutting operating costs and saving time throughout American Industry. Other Blaw-Knox activities are listed below.

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# In Business Abroad

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## Minnesota Export-Import Survey Leans Toward Liberalizing U. S. Trade Policy

What would an increase of U.S. imports mean to Minnesota business? That's the subject of a survey just issued by the University of Minnesota's School of Business Administration and financed, in part, by the Committee for Economic Development.

Aimed at the basic problem of liberalizing trade, the report admits a "high degree of conjecture." Basic findings include:

• Industry employing 25% of Minnesota's industrial workers believes it would gain from liberalized trade; employers of 7% think they would be hurt; the rest see no effect.

• Agriculture—accounting for 11.4% of personal income in the state compared with the national 5.6%—would be more vulnerable, mainly because supports keep prices above world levels.

On the whole, the survey found that trade should be liberalized "because it will strengthen the community of political and economic interest between our allies and ourselves."

• • •

## West Germany Approves Subsidy Plan To Ease Cost-Price Squeeze on Farmers

Since 1949, West Germany's 2-million farms have sopped up around 1.5-billion marks in Marshall Plan aid and government subsidies. But farm costs have steadily climbed higher than the prices the farmers have been able to get for their produce. Result: an annual 3% drop in number of farm workers—and rumblings of complaint.

**The West German parliament has now approved a plan that will ease farm costs by extending to farmers 1-billion marks in direct aid and noninterest-bearing credits.** Among its benefits, the plan will cut the price of fertilizer 20%, remit the sales tax on agricultural products, allow rebates on diesel fuel for farm equipment, improve rural roads, and help in the consolidation of small, unprofitable farm holdings.

There's no timetable for expenditures. But, with politicians eying the 5-million farm votes, the farmers are banking on steady relief ahead.

• • •

## Search for Oil Perks Up in Syria, As Nation Eyes Two Refinery Offers

Compared with its oil-producing neighbors, Syria is a have-not. But oil developments within its borders are gaining momentum.

A syndicate headed by financier Cyrus S. Eaton, chairman of the Chesapeake & Ohio Ry., is reported to have taken exploration leases for about 1-million acres in northern Syria, and to have put up a token $200,000 for initial work. The syndicate, an offshoot of Eaton's Portsmouth Steel Co., has been negotiating with the Syrians through J. W. Menhall, who, along with coal and utility interests, runs Menhall Exploration Co. The oil agreement calls for a three-way split of profits—a third each to the syndicate, Menhall, and the Syrian government.

Meanwhile, the government is toying with offers to build a refinery, to use crude tapped from the pipelines that carry Iraq oil across Syria to the Mediterranean. The Czechs are said to have made the lowest of 28 foreign bids to build a Syrian-financed, 20,000-bbl. refinery. As part of the scramble to help Syria, Esso recently offered to finance and build a 10,000-bbl. refinery (BW—Mar.10'56,p134).

Now the Czechs have sweetened their approach by offering a "ready-to-assemble" refinery that Syria could purchase outright. The Czech deal would supposedly cut construction time—a factor that appeals to the Syrians. The government, however, must go through the motions of checking the package offer against specifications set by an Egyptian oil mission that has been advising the Syrians since late February.

Outsiders say that Syria needs only one refinery for local fuel needs. Yet there's a chance the government may accept both projects, out of nationalistic pride.

• • •

## Business Abroad Briefs

**Atoms-for-electricity:** Guatemala is considering an American & Foreign Power Co. proposal to build an atomic power plant. AFP also plans atomic plants in two other Latin American countries.

**International General Electric** has sold an atomic reactor to the Spanish government for installation at Madrid's Spanish Nuclear Energy Commission. It will be used for research in agriculture and medicine.

**Israel will farm wheat in Burma** under a unique agreement whereby Israel will supply machinery, fertilizer, and instructors for planting 4-million acres along Burma's hillsides. The deal gives Israel a sure source of wheat, expands Burma's wheat acreage and export market.

**Scottish earthworms are inching** onto Britain's export list. A bait company in Hamilton, Ohio, plans to import 10-million worms—worth $400,000—from Aberdeen to help fill the demand from U.S. anglers, who use some 25-million a year.

**International Management Assn.**, a new division of AMA, will discuss the managing of foreign operations at its first conference, Apr. 30-May 2, in New York.

**Lower Africa still seeks oil** from its coal deposits as a substitute for heavy oil imports. Rhodesia Anglo American, Ltd., and Wankie Colliery, Ltd., are undertaking a two-year study to decide whether an oil-from-coal plant is feasible in Southern Rhodesia. They are undeterred by South Africa's scant success, so far, with its $112-million oil-from coal project.

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# INTERNATIONAL OUTLOOK

**Chances have brightened for Congressional approval of OTC—the Organization for Trade Cooperation.**

OTC, a must in Pres. Eisenhower's foreign trade program, this week cleared its first Congressional hurdle with flying colors. **It passed the House Ways & Means Committee with an unexpectedly large majority.**

This week, OTC also got strong backing from 58 business leaders—all trustees of the U.S. Council of the International Chamber of Commerce. This should help some, as the OTC bill goes through the rest of its legislative paces.

**Amendments tacked on to the bill by the House Committee should reduce opposition to the measure**—without reducing the effectiveness of the organization.

The amendments merely provide that OTC is to (1) act only as a policing organization for GATT (General Agreement on Tariffs and Trade); (2) concern itself only with expanding trade; and (3) avoid doing anything that would override U.S. laws or Congressional legislative powers—or anything that would involve the ceding of U.S. sovereignty.

**OTC now is almost certain to pass the House unscathed.** That seems assured by the resounding committee vote and the fact that amendments from the floor will be prohibited. **The Administration's Congressional experts also are sure the Senate will approve it—if it can be brought to a vote.**

**The big hurdle is the Senate Finance Committee.** Senior members of the committee from both parties are either opposed to OTC or lukewarm.

—•—

**U.S. exports of goods and services hit an all-time peak in the fourth quarter of 1955, pushing last year's total to almost $20-billion.**

**Fourth quarter commodity imports also hit their highest level.** (The year's total was $11.5-billion, more than a billion above 1954.)

After adding all the factors in the U.S. balance of payments (including foreign aid and military spending abroad), you get this net result: **The outside world added $1.5-billion to its gold and dollar holdings.**

Our commercial exports of goods in 1955 rose sharply during the second half—to $14.2-billion for the year. And it looks today as if they will go even higher in 1956. Estimates put the first quarter figure at nearly $4-billion, or about the same as last year's fourth quarter.

—•—

**German industry seems determined to rebuild its prewar combines:**

• **Alfried Krupp,** the prewar steel magnate, is agitating to keep his steel and coal properties—despite Allied directives designed to break up the Krupp holdings. Krupp has hired Struve Hensel—former general counsel to the U.S. Defense Dept.—to plead his case here.

• **The three postwar companies that inherited most of the I. G. Farben empire** seem to be putting the combine together again. They are picking up the smaller Farben successor firms by bits and pieces. And they have plans to divide markets and share their research.

• **The three banks that are successors to the Nazis' Grossbanken already**

**have operational unity** (BW—Sep.3'55,p120). Now only a tax gimmick is holding up complete fusion—expected before the end of the year. The three banks already are an important source of credit for German exporters.

**Paradoxically, the whole reconcentration process stands to get an added boost when West Germany's anti-cartel law goes through**—probably by the year's end. This law, which will replace Allied directives, has so many loopholes that it will, in effect, authorize recartelization.

—•—

**The pressure is on in Europe to turn to oil for energy** (BW—Mar.17 '56,p140).

**This week Jersey Standard's German subsidiary announced a big refinery for Cologne.** The plant (100,000-bbl. capacity) will be the Federal Republic's largest, and one of the biggest in Europe. It will be fed by a pipeline from Rotterdam or Wilhelmshaven, where a fleet of six super tankers (36,000 tons) will deliver the crude. The whole project will cost $125-million.

**An Italian parliamentary committee, meanwhile, has sent its recommendations on oil legislation to the Segni cabinet.** The power of the Italian state oil company (ENI) would be cut back—something that is needed, according to private oilmen, to encourage faster development of the peninsula's resources. But there will be plenty of hasseling before the final law is written.

—•—

The British government laid some blunt facts on the line in its annual Economic Survey, published this week. It shows what happened to the British economy last year.

Despite the favorable world economic climate, **Britain's overseas accounts went into the red to the tune of almost $300-million.** (In 1954 they were in the black almost $600-million). **Gold and dollar reserves fell in 1955 by more than 20%.**

A tremendous surge of imports was largely responsible for the red ink. Imports were sucked in by (1) a big increase in fixed investment (7.5% higher than 1954); and (2) a 3% increase in personal consumption (spending on private motoring rose by 26%).

Demand and incomes both rose more rapidly in 1955 than in 1954—but production rose less rapidly. **Under the impact of excess demand, the general price level in Britain went up by 3%, the retail price by 4½%.**

As for the future, **the Survey points to fixed investment as still being the main expansionary force.** It estimates that investment expenditures will be considerably higher this year than last—despite the fact that the credit squeeze is bringing a downward revision of capital plans. That's because so much work is already under way.

**The government expects consumer spending to drop—the Survey says it "must."** And at midweek the Financial Times of London published a survey showing that there has been a sharp drop in consumer goods production, especially autos, radios, household appliances, and furniture.

**Despite this fact, companies in the consumer goods field are making plans for bigger capacity.** British businessmen still are in an expansionist mood, almost comparable to their American counterparts.



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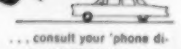

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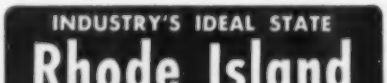

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## LABOR

# Teamsters

- **Threat of a fight between Beck and James Hoffa evaporates at Hawaii session.**
- **The two leaders put on a show of friendship.**

DAVE BECK, president of the big and powerful Brotherhood of Teamsters, emerged from this week's meeting of the union's executive board as unchallenged leader of the Teamsters.

What threatened to be a stormy session of the board (BW—Mar.24'56, p164) ended quickly and amicably. Afterward, Beck and James R. Hoffa of Detroit, the Teamsters' fast-moving ninth vice-president, put on a mutual admiration demonstration for the press and fellow unionists.

• **Love Feast**—A reporter asked Beck if there is any challenge to his leadership in the Teamsters. Beck, in fine fettle after a vote of confidence from his board, called over to Hoffa and asked him, "Who runs this union, Jimmy?"

"If there's any question about it, all they've gotta do is look at you," Hoffa replied.

Asked if the executive board had taken any steps to put the brakes on Hoffa, Beck replied: "Positively not. Why put the brakes on someone who's doing a damned good job of organizing? I wish we had 40 more like him."

• **Well-Earned Rest**—The high degree of friendly cooperation evident—at least on the surface—between the Teamsters' president and the man who, most believe, will eventually succeed him, cheered members of the board who had feared a serious split. They wound up their agenda in short order on the second day of a week's meeting. Then they settled down to enjoy life at the Royal Hawaiian Hotel and on famed Waikiki Beach.

Beck explained that the Hawaiian trip for 25 board members and their wives and staffs (at an estimated $75,000 cost) is a "deserved reward" for men who, he said, have frequently worked far beyond their prescribed hours. But, he said, it established no precedent; it probably won't be repeated next year.

• **Action Taken**—In the two-day meeting, the board:

• Quashed plans for a Teamsters loan of $400,000 to the International

# Strengthen Dave Beck's Hand

**● Teamster loan of $400,000 to Longshoremen is definitely out.**

**● But Hoffa can go ahead with mutual aid pact.**

Longshoremen's Assn., ousted from AFL in 1953 for failing to clear itself of charges of gangster domination. At the same time, the board left Hoffa free to go ahead with a mutual aid pact with ILA, agreed upon last summer to promote joint organizing in dock cities, particularly in the South.

• Gave Beck a vote of confidence for a plan to "personally direct, at New York, Minneapolis, and any other city where needed, the establishment of procedures to guarantee clean, honorable, trade union conduct."

• Approved the purchase of furniture and fixtures in Beck's Seattle home (now union-owned and provided rent-free to Beck) after a fair appraisal; Beck described as "foolish" some estimates that the price would be $100,000—such a figure, he said, must have been "grabbed out of thin air." The furniture purchase plan had threatened to bring a split between Beck and Teamsters Secy.-Treas. John English, but the agreement to let appraisers determine the price averted a showdown.

• Announced that the Flight Engineers' International Assn. (AFL-CIO) will merge with the Teamsters; according to the board, this "opens an avenue to get a Teamsters foot into the airline industry."

• Disclaimed any intention to try to oust or absorb Harry Bridges' left-wing International Longshoremen's & Warehousemen's Union in Hawaii—but, significantly, the board said that the visit to Hawaii had helped show how control of the waterfront can be a strong lever for organizing in other offshore areas, such as Puerto Rico.

• Announced plans for an organizing drive, to be directed by Beck, aimed at adding 250,000 new members to the Teamsters' claimed 1.4-million within the next year. Beck subsequently issued a statement to make clear that he will (1) name and assign staff members for the drive and assume "complete responsibility" for their efficiency and progress, (2) make available all funds necessary to establish regional offices, and (3) otherwise "develop the avenues of organizing procedure."

• Announced that a committee will be named to look into the problem of losses of jobs in the baking industry and others affected by the rapid growth of the frozen food industry and other changes in national marketing and distribution patterns.

• **The ILA Loan**—Most of these actions were routine, but not the important one that involved the loan to ILA.

Hoffa proposed the $400,000 loan from treasuries of the Teamsters' Central States, Eastern, and Southern Conferences to help ILA pay off accumulated debts. The loan was defended as part of a new "natural alliance" working agreement and mutual assistance program.

When the storm of protest broke within AFL-CIO, and in responsible public quarters, Beck at first said that under the Teamsters' constitution the various conferences were free to act autonomously on such matters; it was none of the international union's concern. Hoffa, for his part, said the deal with ILA had at least the tacit approval of Beck and other Teamsters leaders. His first plan obviously was to go ahead with the loan to ILA—no matter what might be said on the outside against it.

• **Meany Steps In**—The position taken by an openly irate George Meany changed that. Backed by provisions of the three-month-old AFL-CIO constitution, the AFL-CIO president threatened the Teamsters with an extreme penalty—suspension—if the loan went through (BW—Mar.10'56,p148). This was probably the toughest stand ever taken by a top labor leader in this country. What's more, there was no doubt whatever that Meany meant what he threatened—or that he had the full support of the new AFL-CIO behind him.

Beck prevailed on Hoffa to postpone the loan until the Teamsters' executive board could consider its possible implications. This week, at Beck's suggestion, and with Hoffa agreeing, the board voted to place "in the hands of the general president [Beck] full confidence in the handling of the longshore situation." He immediately asked for, and got, assurances from the three districts that the contemplated loan to the longshoremen would be withheld—probably permanently, unless ILA returns to AFL-CIO.

• **Basis of Disapproval**—At the same time, Beck said he had always opposed the loan to ILA because it would go toward paying off back debts, not toward new and expansive union activities. ILA will have to work out its financial problems in other ways, he added. At the same time, in defense of ILA, he noted that in three years there have been no convictions of ILA leaders for wrongdoing, despite a steady barrage of accusations.

Although the loan has been called off, Hoffa's general working agreement and mutual aid pact with ILA will continue—although Beck said he was authorized by the board to see that there is nothing in the situation that could rub off unfavorably on the Teamsters.

Beck is returning to the mainland next week and has a date with Meany in mid-April, to discuss the Teamsters-ILA relationship. He hopes the Honolulu discussion will be "satisfactory."

# "Shady Shortcut" Leads to Prison

**Teamsters officials draw jail terms for accepting money from Archer-Daniels-Midland; company gets off with fines.**

What Federal Judge Edward J. Devitt called a "shady shortcut" in labor relations ended last week in $45,500 in fines and prison sentences for a Minneapolis employer and representatives of the Brotherhood of Teamsters.

Archer-Daniels-Midland Co., a leading Minneapolis grain and chemical company, was struck in the spring of 1953 by a local of the United Mine Workers. During the extended walkout, Gerald P. Connelly—a James R. Hoffa protege singled out for particular criticism by Judge Devitt—approached A-D-M officials and urged that the striking UMW local be replaced by a Teamsters local through a vigorous Teamsters organizing campaign.

There were strings attached. A-D-M's vice-president, James W. Moore, paid Connelly $5,000 through an intermediary, according to court testimony. Connelly in turn allegedly gave $1,000 each to Sidney L. Brennan, Teamsters international vice-president; Gene Williams, Teamsters business agent who also runs a downtown saloon, and Jack

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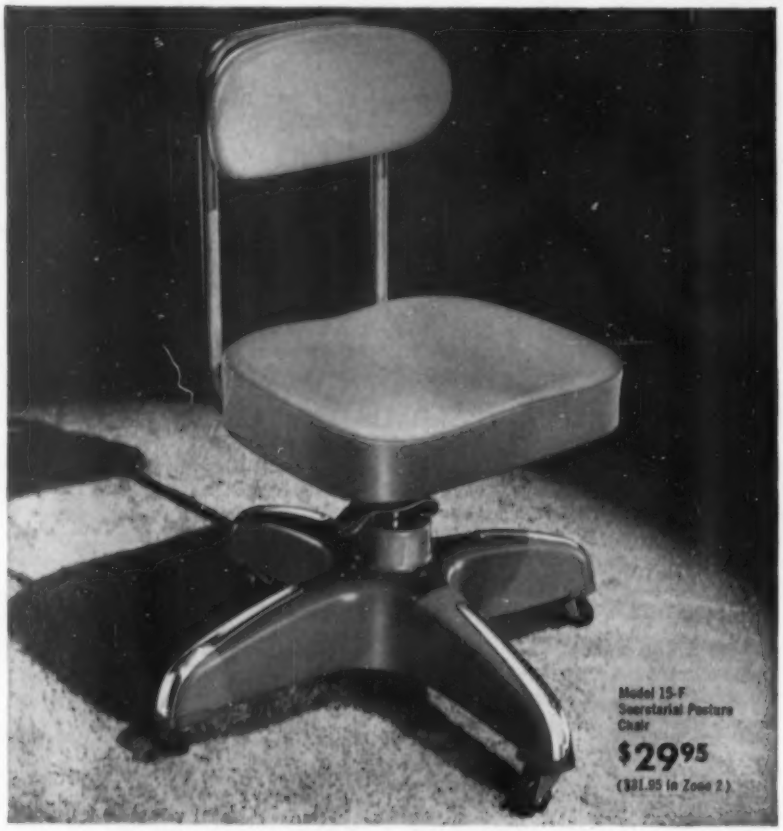


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Jorgensen, president of the Teamsters Joint Council in Minneapolis.

• **Charge**—Under the Taft-Hartley Act, payments by an employer to union officials who represent company employees are illegal; both the employer and the union officers can be held accountable. Although the provision is far-reaching—it is interpreted even to bar Christmas gifts—it has seldom been invoked. However, the government cracked down sharply when details of the A-D-M-Teamsters deal leaked out. It filed charges against A-D-M and Moore, on the employer's side, and against the four Teamsters officials. The government hung its case on the fact that Brennan's Teamsters local represents four A-D-M over-the-road drivers who were not on strike.

The defendants contended that they were not aware that the Teamsters represented the four A-D-M drivers—and that no A-D-M-Teamsters relationship existed that barred an employer payment to the unionists. However, a federal jury convicted all the defendants.

A-D-M and its vice-president, Moore, were sentenced to fines of $10,000 each. Connelly was sentenced to two years in jail and a $7,500 fine; Brennan and Williams received suspended two-year jail terms and $7,500 fines, and Jorgensen got a $3,000 fine. The defendants are appealing.

• **Serious Offense**—Judge Devitt, in handing down sentences, said in part: "It is a serious offense, deserving of substantial punishment, when a laboring man's rights and welfare are bartered and euchred about by unscrupulous leaders for their own gain. . . .

"Specific law or not, it is obvious that the conduct on trial here was at least morally wrong. It would not take the reading of a lawbook to give these defendants an awareness of the probable illegality of their conduct."

Judge Devitt excoriated Connelly's "concept of a labor official's responsibility and ethics" as "completely at variance with that of the respected, responsible American labor leader."

• **Record**—Connelly was also convicted in 1955 of accepting a payoff from a St. Paul employer whose workers he represented. He was sentenced a week ago to one year in Hennepin County jail for allegedly directing the dynamiting of a car belonging to a "noncooperative" Teamsters official, and faces trial in a second bombing case. In both, the "noncooperation" consisted of refusal to respect Connelly-ordered "advertising" banners placed before nonunion liquor stores.

The convictions brought from Teamsters' Pres. Dave Beck in Honolulu a promise to "personally direct . . . the establishment of procedures to guarantee clean, honorable trade union conduct" in Minneapolis (page 156). END

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Ford Motor Company, Dearborn, Mich.
The Garlock Packing Company, Palmyra, N.Y.
Graton & Knight Company, Worcester, Mass.
John Strange Paper Company, Menasha, Wis.
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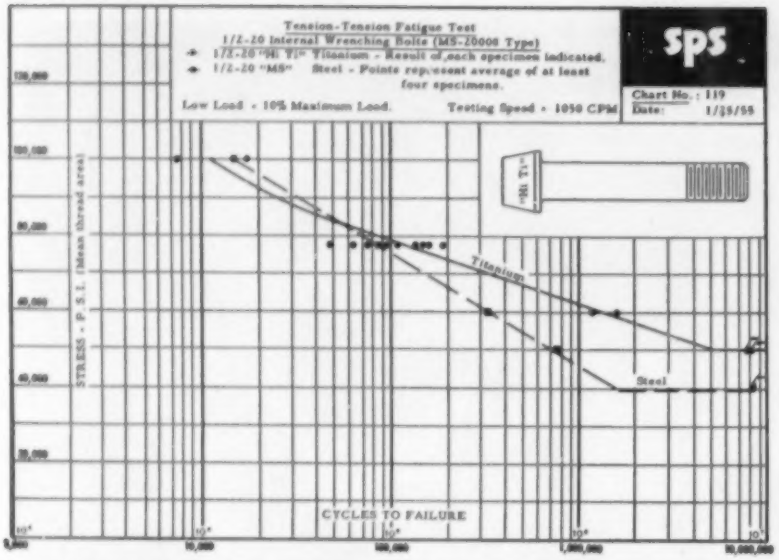
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Chart No.: 119
Date: 1/25/55
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# Reuther Emerges

## Former CIO president is moving back in the labor spotlight as head of the AFL-CIO Industrial Union Dept.

Since Walter Reuther relinquished his CIO presidency in the AFL-CIO merger, he has carefully stayed in the background—giving the new alliance and its president, George Meany, quiet and full support. Now, there are signs that Reuther may be ready to move out into the open again, not as a challenger to Meany but as a dynamic departmental head with Meany's tacit approval.

This surprises nobody in the new federation. There has been speculation since last December over Reuther's future status in the united labor movement. Nobody has been ready to write him off as just another vice president, or even as a member of the top-level AFL-CIO executive committee.

The 48-year-old head of the 1.5-million member United Auto Workers is too accustomed to a powerful voice in labor's ranks, and has too strong a personality and too much drive, to remain quietly in the background for long.

• **International Spokesman**—Next week, Reuther leaves for a 10-day visit in India at the invitation of the government of India and of the Indian National Trade Union Congress. He will assume a role he enjoys—that of an international spokesman for American labor. This gives him a license to speak out on foreign policies on his return.

Several weeks ago, as head of AFL-CIO's new and important Industrial Union Dept., which includes 72 unions with more than 7-million members, Reuther resumed his vigorous social and economic campaigning in a way that delighted his partisans from the former CIO and frightened some from AFL.

IUD was formed last December as the industrial union counterpart of the Building & Construction Trades Dept., the Maritime Trades Dept., the Metal Trades Dept., and other AFL groups carried over into AFL-CIO. Like the others, IUD is designed to promote bargaining, legislative and jurisdictional interests of its member unions.

Once viewed skeptically as a CIO inside the newly merged federation, IUD was reshaped by the rush of 45 erstwhile AFL unions into the industrial department. Former CIO unions still have about a 2-to-1 vote in the department, but AFL influences already are being felt.

• **Reuther's Influence**—In spite of these, IUD's first organizational meeting held in Washington a few weeks ago

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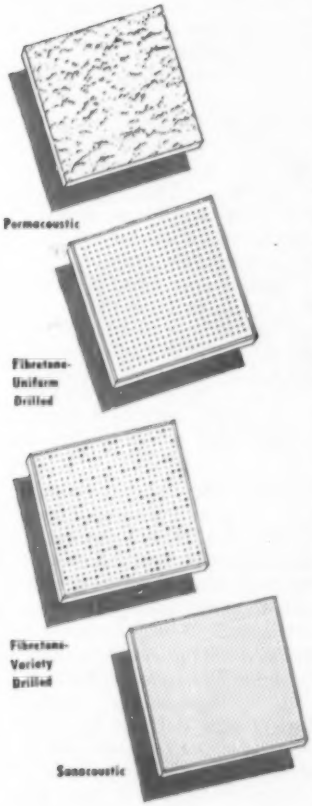


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showed the department veering somewhat away from the limited agenda of an AFL department. Under Reuther's guidance, IUD became, in effect, the national sounding board Reuther lost with the demise of CIO. And while it did nothing that would conflict with federation rules—Reuther, a strong advocate of unity, will hardly lead IUD onto a divergent course—the department gave evidence that it might develop into a bloc that could be used to pressure the federation into going in the direction Reuther believes it should go.

For instance:

• IUD did not wait for the AFL-CIO ethical practices committee, which is authorized to act on charges of corruption and Communism in labor, to study charges leveled at two unions—the former AFL auto workers and the jewelry workers. IUD denied departmental membership to both, pending its own investigation of their fitness.

• Although AFL-CIO affiliates can refuse to sign no-raiding agreements, IUD pointedly refused to appoint representatives of non-signing unions to its executive committee. This barred the giant Brotherhood of Teamsters from the IUD governing body.

• And IUD spoke out strongly on a number of domestic issues, including civil rights, although they would not fit into a traditional departmental agenda. IUD developed a strong stand of its own (but within the framework of the AFL-CIO stand) on the civil rights problem now plaguing AFL-CIO because of its southern members. IUD made clear that it would not agree to any softpedaling on the racial issue.

All these matters are of particular interest to Reuther, and all fit into the areas that he feels AFL-CIO should preempt for leadership. By having IUD take such positions for clean unionism, an end to jurisdictional strife, and a firm stand against race bias, Reuther apparently is trying to show the way.

• **Harmony At the Top**—Reuther probably cleared his moves in advance with Meany, and will continue to. On most matters, the two think alike. They work together closely. They need each other's support. Any weakening in the authority of one will also in time weaken the other. So no collision between the two is to be expected.

One point will bear watching, though. Reuther's ways and his programs frequently contain a degree of impatience not evident among those of other union leaders.

• **Organizational Setup**—The departmental meeting in Washington devoted itself mainly to organizational work. Among other things, IUD set up subdivisions of unions in the same fields, to serve as clearinghouses for information on collective bargaining, legisla-

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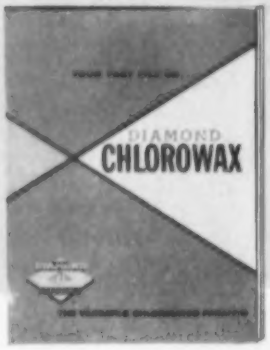


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tive aims and the like, and to coordinate activities where possible.

A metal and manufacturing division was authorized, to include auto, steel, shipbuilding, machinists, electrical, and other unions.

A softgoods division will include textile, apparel, and other unions concerned with such mutual problems as the migration of industry, women workers, higher wage minimums, etc.

• **Informal Alliances**—The alliances, at least at this point, are to be informal. They are a compromise with old AFL departmental practices that call for direct bargaining for affiliates and the settlement, where necessary, of jurisdictional rows. IUD won't bargain for its unions or resolve job rivalries. At the same time, its special subdivisions will be encouraged to give informal assistance toward those ends.

Eventually, stronger actions may be taken in this area. At the organizational meeting, some big IUD unions asked for "protection" against small unions that sign contracts—under employer pressure—that undercut the big unions in subsequent bargaining with the same employers.

IUD already has run into conflict with the Building & Construction Trades Dept., principally over industrial installation. But its recent meeting decided to support the other department in its efforts to win AFL-CIO executive council support for a proposed Taft-Hartley amendment that would legalize contract bargaining in the construction industry before employees are hired—a traditional practice in the industry. The AFL-CIO council, opposed to piecemeal changes in T-H, has refused to support the proposal.

## Cost of Living: What's Happening to It

| | Total Cost of Living | 1947-49 = 100 Food | Clothing | Housing Total | Housing Rent Only |
|---|---|---|---|---|---|
| February, 1949 | 101.6 | 98.9 | 102.0 | 103.7 | 103.7 |
| February, 1950 | 100.4 | 96.5 | 96.7 | 104.6 | 107.7 |
| February, 1951 | 109.9 | 111.9 | 105.6 | 111.2 | 111.3 |
| February, 1952 | 112.4 | 112.6 | 106.8 | 114.0 | 116.4 |
| February, 1953 | 113.4 | 111.5 | 104.6 | 116.6 | 121.5 |
| February, 1954 | 115.0 | 112.6 | 104.7 | 118.9 | 127.9 |
| February, 1955 | 114.3 | 110.8 | 103.4 | 119.6 | 129.7 |
| March | 114.3 | 110.8 | 103.2 | 119.6 | 130.0 |
| April | 114.2 | 111.2 | 103.1 | 119.5 | 129.9 |
| May | 114.2 | 111.1 | 103.3 | 119.4 | 130.3 |
| June | 114.4 | 111.3 | 103.2 | 119.7 | 130.4 |
| July | 114.7 | 112.1 | 103.2 | 119.9 | 130.4 |
| August | 114.5 | 111.2 | 103.4 | 120.0 | 130.5 |
| September | 114.9 | 111.6 | 104.6 | 120.4 | 130.5 |
| October | 114.9 | 110.8 | 104.6 | 120.8 | 130.8 |
| November | 115.0 | 109.8 | 104.7 | 120.9 | 130.9 |
| December | 114.7 | 109.5 | 104.7 | 120.8 | 131.1 |
| January, 1956 | 114.6 | 109.2 | 104.1 | 120.6 | 131.4 |
| **Feb., 1956** | 114.6 | 108.8 | 104.6 | 120.7 | 131.5 |

*Data: Dept. of Labor, Bureau of Labor Statistics.* ©BUSINESS WEEK

# Another Month Without Change

The Dept. of Labor's monthly cost-of-living index held steady in February, at 114.6% of 1947-49 costs, despite a rise in prices for most consumer goods. Food costs declined for the fifth straight month, to 108.8%, their lowest level since December, 1950; their seasonal drop from January offset increases in other index items.

No major wage adjustments were due on the basis of the mid-February cost figure. General Electric and other electrical manufacturers have c-of-l clauses that provide for adjustments on a March index figure; auto companies, on an April index.

• **Take-Home Unchanged**—The Bureau of Labor Statistics at the same time reported that average weekly take-home pay was unchanged from January, at a record February level of $71.92 for the worker with three dependents or $64.59 for the worker with none. Both figures were about $2.90 higher than a year ago.

BLS noted that this gain of about 4% in take-home pay represents increased buying power; consumer prices showed little change. END

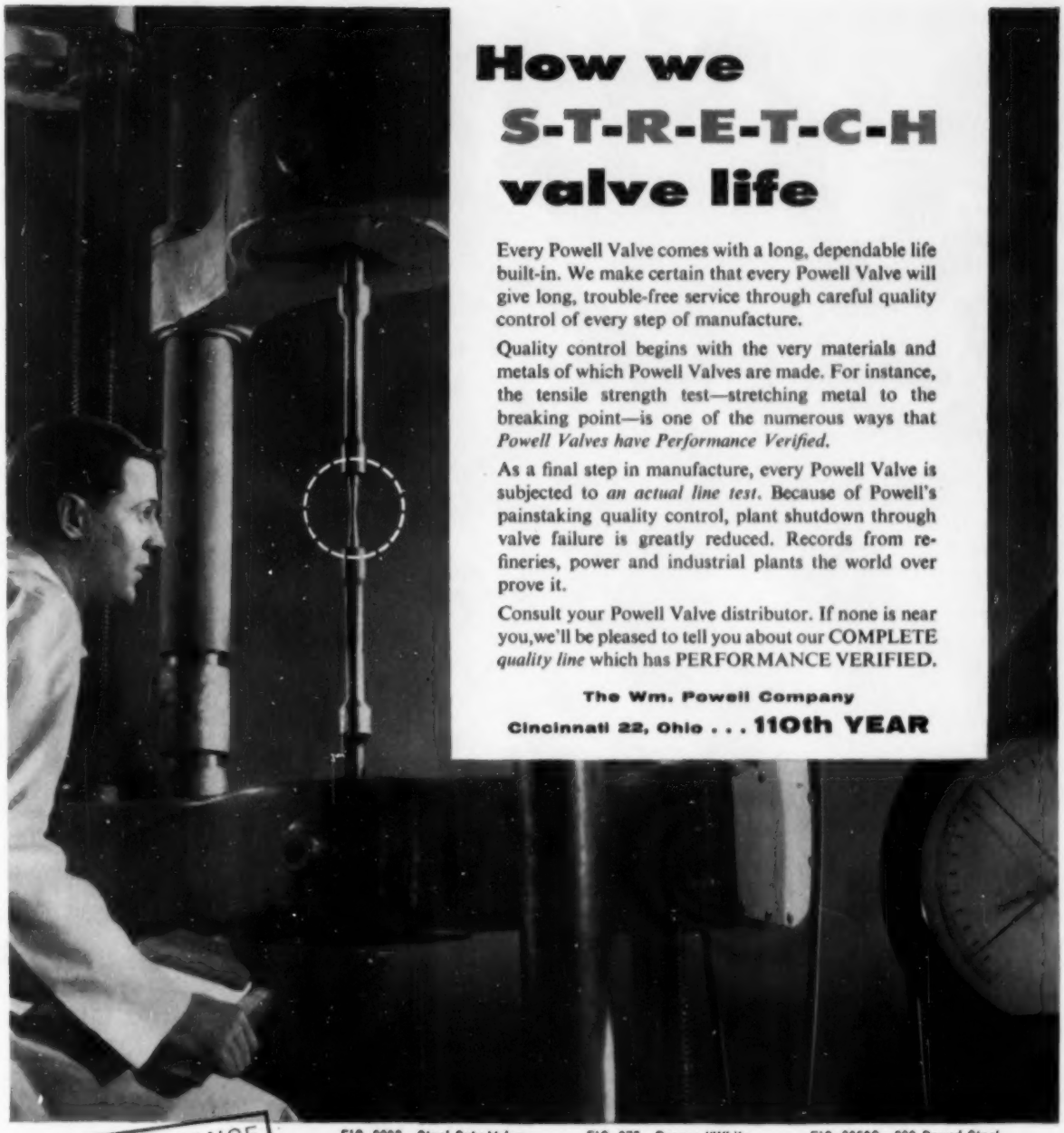

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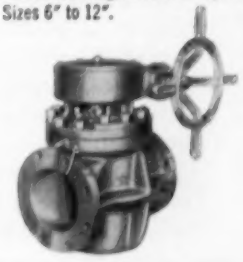
FIG. 3003—Steel Gate Valve For 300 Pounds W.S.P.

FIG. 375—Bronze "White Star" Gate Valve For 200 Pounds W.S.P.

FIG. 3059G—300-Pound Steel Lubricated Plug Valve Gear Operated. Sizes 6" to 12".



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## MECHANICAL DIVISION OF General Mills

# In Labor

• • •

## Sunbeam Drops Plans to Require Periodic Lie Tests for Workers

Sunbeam Corp. in Chicago last week dropped plans to require employees in its electric shaver department to take periodic lie detector tests, even though it says it has a continuing interest in the "very serious pilferage problem."

In return, the International Assn. of Machinists withdrew National Labor Relations Board unfair-labor-practice charges against Sunbeam (BW—Feb.11'56,p148).

**The company plans to install detection devices at exits. If a device indicates an employee is carrying something on his person, and he refuses to show it, he can be required to take a lie detector test.** He can be fired "for cause" if he refuses. Tests also can be required if employees are apprehended with appliances or parts on their person, in lockers, or in cars, or if they are implicated in thefts by others.

**IAM promised to cooperate in this program.**

• • •

## UMW Wins Royalty Award, But Comes Out on Losing End

Late last year the United Mine Workers levied a special assessment on miner members for a legal defense fund. It warned at the time of troubles looming in the courts.

**This week, UMW came out of one suit—watched closely for its possible implications in others—poorer by $4,513 plus legal expenses, even though it won a substantial royalty award.**

UMW sued the Benedict Coal Co., St. Charles, Va., for welfare fund royalty payments for the years 1950-1953. Benedict filed a counterclaim for $81,017, alleging "illegal strikes and walk-outs" by the union, either "encouraged or acquiesced in" by UMW officers, had cost the company that much in damages.

A federal court jury agreed, on the basis of Benedict production figures, that UMW was due $76,504 in back royalties. At the same time, it allowed the company $81,017 strike damages. The difference gave Benedict a net $4,513 in damages.

**Other coal operators in arrears on royalties have followed a similar policy of counter-suing for strike damages.**

• • •

## Members of Pilots' Union Will Get Rebate on Dues

Airline pilots are checking dates on their union cards this week. The reason: Their union, the Air Line Pilots Assn., is splitting a $386,848 "melon" among members in good standing as of Mar. 31. Each will receive a dues refund ranging from $11 to $55—or $1 back for every $5 paid in over the past year.

**Some unions feel stronger with steadily fattening coffers. Not ALPA. Its president, Clarence Sayen, feels hefty treasuries invite trouble. At his urging, ALPA convention delegates in 1954 put a ceiling on the union's funds. When income runs more than 15% above expenses, members get a rebate on dues.**

• • •

## AFL, CIO Groups in Two States Ignore Beck on Merger Delay

"I am sincerely convinced that it would be to the best interest not only of the Teamsters but of the AFL and CIO labor movements in your locality if they proceed slowly and carefully before effecting any formal merger locally. Let us take full advantage of the two-year provision. . . ."

**Those words in a letter signed by Dave Beck have stirred protests in AFL-CIO ranks in Missouri and other states where unity on state and local levels is now being negotiated.** Where Teamsters influence is strong, they may stall state mergers until December, 1957.

However, the admonition was ignored a week ago when Arkansas AFL and CIO groups merged into a new 60,000-member Arkansas State Federated Labor Council—in which a Teamsters official holds the presidency. And AFL leaders in Missouri refused to delay a merger convention set for April 7.

Beck's reason for delay cited in the letters is to provide time to "become thoroughly familiar with one another's problems and if possible solve many of them before an active merger takes place." **The Teamsters contend that jurisdictional conflicts should be cleared up before further merging.**

**AFL-CIO spokesmen believe that there are other reasons for the Teamsters position—including the truckers' probable loss of state and local council power once AFL and CIO bodies unite.**

• • •

## Labor Briefs

**Loss of union membership** (but not jobs) faces 12,000 members of the Communications Workers of America who refused to contribute a day's pay to a strike fund set up by CWA's convention last year. . . . **Meanwhile, CWA plans a mop-up drive,** opening next month, to unionize 80,000 telephone workers covered by CWA contracts who don't belong to the union.

**Westinghouse Electric Corp.** and the independent United Electrical Workers last weekend reached a strike-ending contract similar in terms to that signed by the corporation and the International Union of Electrical Workers (AFL-CIO). It's a five-year pact with a minimum 25¢ pay hike by 1960 (BW—Mar.24'56,p168).

**United Auto Workers has just flexed its muscular assets**—almost $39.5-million worth. This is UAW's debt-free position, Emil Mazey, union secretary-treasurer, revealed. Of this total, over $26.8-million is strike money. UAW is $19.3-million richer than last year.

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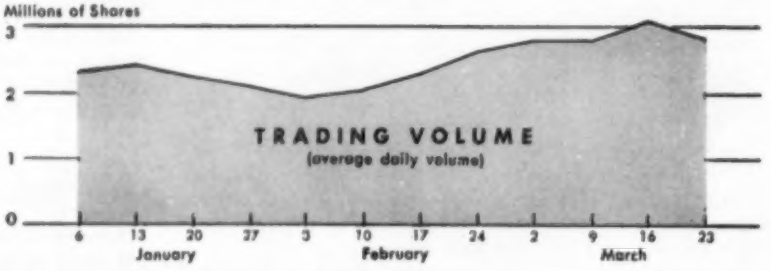
## The 1956 Bull Market: After a Seven-Week Lull, New Highs...

## ...On Heavier Volume




Data: Standard & Poor's Daily Stock Price Indexes; New York Stock Exchange. ©BUSINESS WEEK

# A Step Down From Peak

After piling up a series of bull market highs (chart) the market went through a corrective period this week—one that many investors had expected.

Only a few days ago Bache & Co.'s Wall Street letter gently warned that despite "the high rate of confidence that exists and the strength of the buying power behind the market," the market, "is not a one-way street and there will be periods of correction."

The statement proved well timed. On Monday traders started rather briskly to cash in on some of the paper profits that had piled up since mid-February. On Tuesday and, to a lesser extent, on Wednesday the profit-making continued.

• **Losing Ground**—Considering today's high prices and thin markets, the losses this week weren't frighteningly large. But there were many individual issues where they weren't reassuringly small.

Generally, members of the stock groups that had led the sharp advance of recent weeks (table, below) were the

hardest-hit, but the price drops weren't confined to these shares.

On Monday, only 39% of all issues traded on the Big Board were able to climb, while 41% were thrown for losses. On Tuesday, the showing was even worse—only 24% of issues scored gains while 56% were taking losses.

• **Significance**—What touched off this week's sudden desire to take profits? Undoubtedly it was the sharp price weakness that London's important copper market suddenly showed (page 19). Copper shares had lately been zooming merrily to one new high after another, so they were correspondingly vulnerable to any bad news. Once they started dropping sharply, it seemed to be a signal for profit-taking in many other sections of the list.

Does this week's performance have serious and immediate significance? Wall Street's bulls say no, and they could well be right. Harold Clayton of Hemphill Noyes & Co. calculates that in the last six weeks the entire market has scored a rise of 3,662 points, probably the sharpest ever chalked up in so short a time. Thus, the market would seem to be entitled to a period of consolidation.

However, many "smart analysts" are again calling their clients' attention to the extreme selectivity of the market.

## Recent Market Leaders . . . and Laggards

| Group | Bull Market High | Last Month's Low | Recent Level | Recent Level vs. Bull Market Feb. High | Low |
|---|---|---|---|---|---|
| Coal—bituminous | 945.8 | 774.5 | 945.8 | ..... | +22.1% |
| Copper | 351.7 | 287.1 | 349.5 | − 0.6% | +21.7 |
| Aluminum | 1344.0 | 1126.7 | 1344.0 | ..... | +19.3 |
| Lead, zinc | 150.0 | 109.9 | 129.9 | −13.4 | +18.2 |
| Office, business equipment | 644.0 | 550.8 | 644.0 | ..... | +16.9 |
| Building materials | 373.4 | 325.2 | 373.4 | ..... | +14.8 |
| Drugs | 182.5 | 159.0 | 182.5 | ..... | +14.8 |
| Air transport | 668.9 | 523.9 | 599.5 | −10.4 | +14.4 |
| Containers—glass | 226.3 | 198.4 | 226.3 | ..... | +14.1 |
| Mining, smelting | 258.8 | 227.0 | 258.8 | ..... | −14.0 |
| Electrical equipment | 422.0 | 367.1 | 418.1 | − 0.9 | +13.9 |
| Paper | 1710.7 | 1501.6 | 1710.7 | ..... | +13.9 |
| Radio, TV, electronics | 515.6 | 417.4 | 474.7 | − 7.9 | +13.7 |
| Shipping | 829.8 | 733.8 | 829.8 | ..... | +13.1 |
| Tires, rubber goods | 1211.9 | 1072.4 | 1211.9 | ..... | +13.0 |
| Metal fabricating | 405.4 | 361.4 | 405.4 | ..... | +12.2 |
| Machinery | 322.6 | 288.1 | 322.6 | ..... | +12.0 |
| Steel | 517.9 | 455.6 | 510.4 | − 1.4 | +12.0 |
| Auto parts, accessories | 280.8 | 251.2 | 280.8 | ..... | +11.8 |
| Machine tools | 419.8 | 378.3 | 419.2 | − 0.1 | +10.8 |
| Printing, publishing | 200.6 | 183.6 | 200.6 | ..... | + 9.3 |
| Oil, integrated companies | 592.0 | 541.7 | 592.0 | ..... | + 9.3 |
| Auto trucks | 252.9 | 230.0 | 251.1 | − 0.7 | + 9.2 |
| Soaps | 314.2 | 287.7 | 314.2 | ..... | + 9.2 |
| Chemicals | 502.9 | 458.7 | 499.6 | − 0.7 | + 8.9 |
| Vegetable oil | 293.8 | 226.3 | 243.6 | −17.1 | + 7.6 |
| Autos | 534.3 | 455.1 | 489.0 | − 8.5 | + 7.4 |
| Oil—crude producers | 1106.8 | 1030.5 | 1106.8 | ..... | + 7.4 |
| Containers—metal | 160.0 | 149.2 | 159.0 | − 0.6 | + 6.6 |
| Leather | 238.4 | 183.3 | 194.4 | −18.5 | + 6.1 |
| Gold mining, (U. S.) | 82.6 | 57.4 | 60.7 | −26.5 | + 5.7 |
| Railroad equipment | 159.9 | 150.4 | 158.7 | − 0.8 | + 5.5 |
| Department stores | 394.7 | 364.2 | 383.3 | − 2.9 | + 5.2 |
| Motion pictures | 278.0 | 235.9 | 248.0 | −10.8 | + 5.1 |
| Aircraft manufacturing | 716.0 | 641.0 | 673.6 | − 5.9 | + 5.1 |
| Sulfur | 482.4 | 427.1 | 448.6 | − 7.0 | + 5.0 |
| Distillers | 531.6 | 462.3 | 484.7 | − 8.8 | + 4.8 |
| Finance companies | 286.7 | 256.2 | 266.5 | − 7.0 | + 4.0 |
| Soft drinks | 141.1 | 128.0 | 133.1 | − 5.7 | + 4.0 |
| Carpets, rugs | 160.8 | 135.0 | 140.0 | −12.9 | + 3.7 |
| Sugar | 154.5 | 129.1 | 133.8 | −13.4 | + 3.6 |
| Food companies | 216.6 | 204.7 | 211.9 | − 2.2 | + 3.5 |
| Mail order, general chains | 499.4 | 425.4 | 439.3 | −12.0 | + 3.3 |
| Food chains | 372.2 | 353.5 | 364.5 | − 2.1 | + 3.1 |
| 5¢, 10¢, $1 chains | 137.8 | 122.7 | 126.5 | − 8.2 | + 3.1 |
| Shoes | 164.6 | 154.2 | 156.5 | − 4.9 | + 1.5 |
| Fertilizers | 601.4 | 474.3 | 480.6 | −20.1 | + 1.3 |
| Textile weavers | 351.5 | 266.2 | 268.5 | −23.6 | + 0.9 |
| Confectionery | 169.8 | 165.3 | 165.1 | − 2.8 | − 0.1 |
| Cigarette manufacturers | 97.8 | 93.6 | 93.4 | − 4.5 | − 0.2 |
| Cigar makers | 203.9 | 187.6 | 186.1 | − 8.7 | − 0.8 |
| Agricultural machinery | 193.8 | 178.5 | 175.1 | − 9.7 | − 1.9 |
| Rayon, acetate yarn | 634.3 | 369.9 | 360.5 | −43.2 | − 2.5 |
| Shipbuilding | 579.5 | 478.6 | 466.0 | −19.6 | − 2.6 |

*Data: Standard & Poor's Corp. Weekly Stock Price Indexes (1935–1939 = 100).*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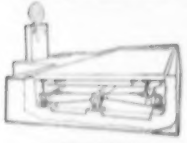
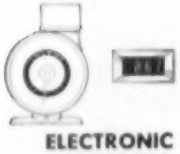
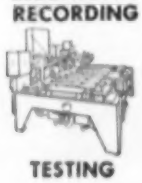


WEIGHING

COUNTING



ELECTRONIC RECORDING



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# Wall St. Talks . . .

## . . . about Lukens Steel shares . . . the new push on money rates . . . Alleghany Corp.'s paper profits.

**The 76% rise in Lukens Steel** stock since late January puzzles Wall Streeters. Even the usual rumors of stock splits, mergers, etc., don't account for the climb from $42 to $74, they say.

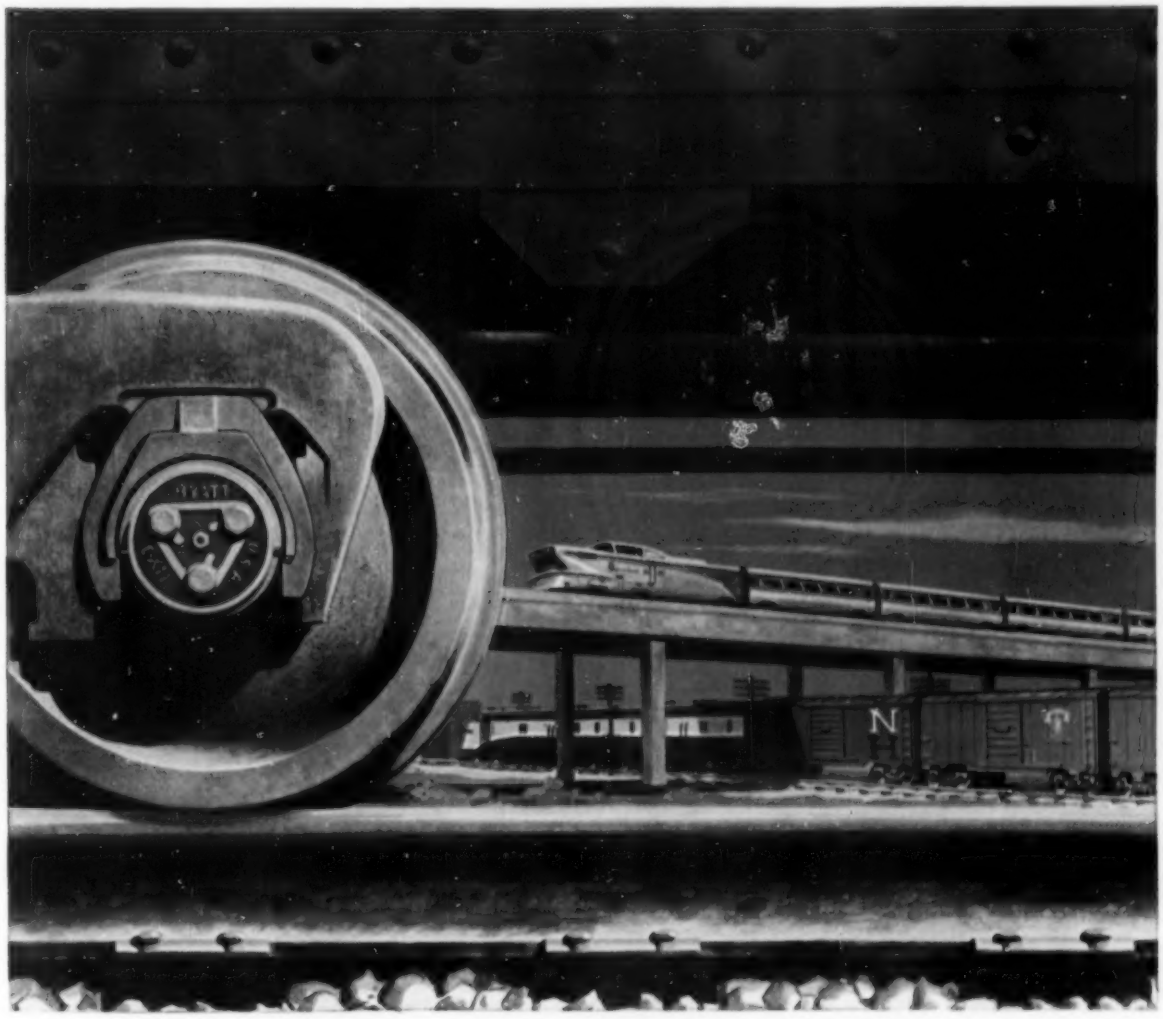
**Money rates are going up again.** Wall Street banks are boosting their rates on new broker and dealer loans from 3¾% to 4%. Many Streeters expect the prime rate on business loans also to be hiked soon. . . . In the new issue markets, bond buyers are successfully holding out for higher yields. After buyers had ignored recent offerings as "too rich," the syndicates handling several of them finally let them find their own market level. Here's what happened: Connecticut Turnpike bonds offered originally at 101.39% of par were soon down to 97.74 bid; Pacific G&E 3¾s offered at 101.12 skidded to 99.375; Houston Lighting 3¼s offered at 101.15 quickly dropped to 99.25.

**Robert R. Young's Alleghany Corp.** has done mighty well on its New York Central stock purchases. At the turn of the year, it could boast of a $16-million paper profit on its 846,400 Central shares. It hasn't been so fortunate on 118,900 shares bought since then; their average cost of $43.72 is $1.10 above today's market.

**Why not split the Dow-Jones industrial average, too?** This old Street gag is always revived whenever the average hits new highs and stock-splitting is rampant under its influence. Lately, though, more and more Streeters have been wondering seriously if such a split might not be in order. So are two University of Michigan finance professors. They say the index is so high that it no longer accurately reflects the market's daily fluctuations. Changes, they claim, are magnified some six times. They suggest a 10-for-1 split, easily accomplished by moving the decimal point one space to the left.

**The rumor corner:** Talk of merger between International Tel & Tel and Underwood Corp. isn't purely "hot air." Both companies admit having had conversations on the subject, though they doubt anything will happen soon. . . . Another rumor, however, has been branded false. Minneapolis-Honeywell emphatically denies that it is about to acquire Lear, Inc.

# Another GM contribution to railroad prosperity



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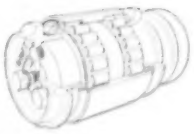

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# PERSONAL BUSINESS

BUSINESS WEEK
MAR. 31, 1956

**While the subject of income taxes is still fresh in your mind, it is pleasant and wise** to consider a real break you can get in estate planning—the marital deduction. This allows you to leave about half your estate to your wife tax-free.

Properly used, **the marital deduction can sharply cut or even, in some cases, eliminate the estate tax completely.** For example:

Say you have an estate of $120,000 that's going to be subject to an estate tax. If you're unmarried, at least $60,000 of the estate can be taxed ($120,000 less the $60,000 exemption).

But if you're married and leave $60,000 to your wife, **there is no estate tax at all**—because there is no taxable estate. The $60,000 exemption plus the $60,000 marital deduction wipes it out.

**Note that the marital deduction can never be more than 50%** of your gross estate, less certain expense deductions. Yet even if your total estate were $150,000, it would have to pay a tax on only about $15,000 of it ($1,050)—still quite a saving.

**Don't let the obvious advantages of the marital deduction as a tax-cutting tool blind you to its limitations.** For it contains some risks when used in certain situations.

For instance: The marital deduction is most beneficially used when your wife's personal holdings are much less than yours. When her property is equal to or greater than yours, it must be used cautiously if any saving is to be realized.

**Otherwise, your estate-tax savings might be at the expense of her estate.** That is, by shifting property from your estate into hers, you push her estate into higher tax brackets than yours. This defeats the whole purpose of the marital deduction, which is to equalize the two estates.

**To get the marital deduction**, you must either leave your wife complete and unrestrained ownership in the property, or the equivalent of such complete ownership. You cannot get a marital deduction when your wife is to get income for life from property that is to go, by your direction, to someone else when she dies.

That's because the government doesn't want the property to be inherited without subjecting it to an estate tax.

However, this problem will not arise if your wife **uses up the principal of the property so it can't be inherited by someone else.**

This could be the case with life insurance proceeds, for example.

Few problems arise when you leave property to her outright. **But check carefully; there may be technical restrictions that disqualify the move.** For example, insurance proceeds payable under an optional-settlement plan do not automatically qualify as a marital deduction; they can do so only if your wife is named as unconditional beneficiary, and has an unrestricted "power of appointment" (the right to name who is to get any unpaid proceeds).

**Supposing you don't want to leave your wife complete control of your property for some reason**—say because she may be inexperienced in financial matters. You can make one of these arrangements:

• **The "power of appointment" trust.** This must provide that your wife will receive at least annually all of the trust income. In addition, she must have the power to transfer the trust principal to anyone—including herself or her estate. The rules are strict, technical, and sometimes inflexible.

• **The "estate trust."** Your wife is entitled to all the trust income for life. When she dies, the principal is to be paid to her estate. In this arrangement, income doesn't have to be distributed annually, but can be accumulated.

These are the basic factors involved in planning for the marital deduction. Individual application calls for the services of expert estate planners. In most cases, they can find a way to apply it so as to give a tremendous tax break to the inheritance you leave your wife.

—•—

**If you're going abroad, you can save a lot of money by buying your foreign currency before you leave.** Savings run from 2% to 60%, according to Deak & Co. & Perera Co., New York foreign-exchange house.

The reason is that most countries regulate the value of their currencies at home and fix official rates. But in the few free markets of the world, including the U. S., currency rates are flexible, based on supply and demand. It reflects the actual trading value of the currency.

Thus in Istanbul, for example, **$1 buys 2.8 Turkish liras; yet in New York the same $1 will buy around eight Turkish liras**—nearly three times as much. French francs and Spanish pesetas run about 12% below official rates in the free markets; Philippine pesos about 30% below.

Having "free-market" currency on arrival also avoids fees that are usually charged by banks and hotels for exchanging currency.

**Another way to avoid or cut down the exchange problem is to use a credit-card system.** One of these, Travelers Credit Service, has been approved by American Society of Travel Agents, is available through any of its members.

In addition to credit privileges, the service gives the European tourist a valuable guide to the restaurants and shops in its plan.

—•—

**Make plans now if you want to have any electrical work done soon**—including air conditioning. Around the middle of April, the electric industry is starting two giant promotional programs to sell modernized electrical wiring systems for the home. Authorities say that once the effects are felt, the industry will be loaded to capacity, and you'll have a long wait for service.

—•—

Johnson & Johnson has a new all-purpose home medication, simply called **First Aid Cream**, which provides antiseptic action in treatment of **cuts, abrasions, burns, chapping, sunburn, insect bites.** It's said to be stingless, greaseless, and nontoxic, comes in a polyethylene tube.

—•—

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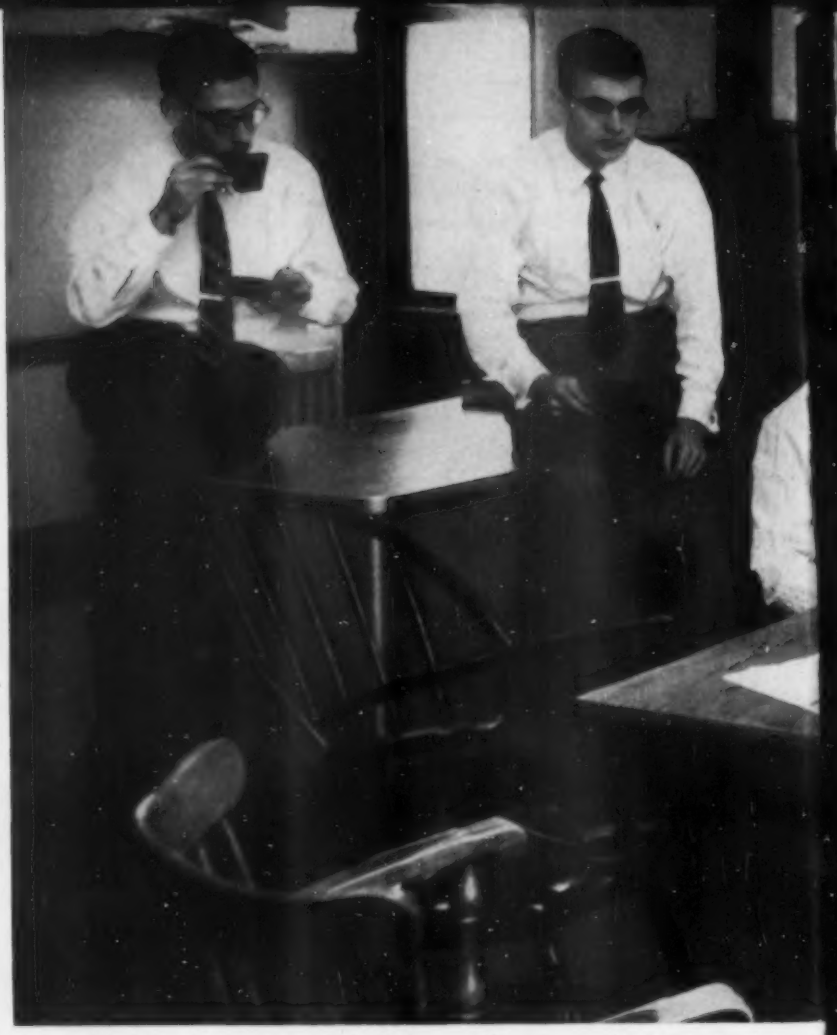
## United States Rubber

Leontief argues with economist James Henderson a problem in how fuel and energy resources affect industrial changes . . .

. . . Stops for impromptu corridor conference with Dr. Elizabeth W. Gilboy, Project Associate Director and consumption expert.

. . . Helps mathematician Marie McCarthy set up a computational problem; she and Virginia Clark handle this part of work.



Harvard's Wassily Leontief (holding coffee cup, above center) runs

# Discovering How U.S.

Economic research—like the American economy itself—is in the throes of a technological revolution. From a small-scale, low-budget operation, carried on by isolated scholars working more in competition than in cooperation with each other, economic research is changing into the kind of large-scale, expensive, integrated team operation you see pictured on these pages. This sort of operation chews up masses of raw statistical material, organizes it into a unified scheme. At all stages, theoretical and empirical work must jibe.

One of the founding fathers of this revolution—many would say the most important of the founders—is the man you see in all the pictures: Harvard's Wassily W. Leontief, Henry Lee Professor of Economics, Director of the Harvard Economic Research Project on the Structure of the American Economy, and inventor of the input-output system of economic analysis (BW—Dec. 15'51,p94;Jan.10'53,p141).

• **Rocks and Bouquets**—At this point, Leontief's technological revolution in economic research is still at the stage where most other American research workers are throwing rocks at his plant windows or trying to drop shoes into the complicated Leontiefian machinery, which they seem to fear may make them obsolete.

But Leontief also has his staunch supporters, at home and abroad—including his colleagues on the Harvard economics faculty. Knowing that Leontief was in urgent need of heavy support from the Ford Foundation for a long-term research program he had mapped out, these colleagues agreed among themselves not to ask Ford for any funds to support their own research this year.

• **Much, But Not Enough**—The Ford

**team of research economists, statisticians, mathematicians whose combined aim is . . .**

# Economy Fits Together and Grows

Foundation has just come through with a $240,000 grant to Leontief's input-output team. This, together with $240,000 already granted for his project by the Rockefeller Foundation and $50,000 left over from an earlier Ford grant, provides the Leontief group with over a half-million dollars to finance their work for the next six years.

But this half-million dollars, which to most other economic researchers seems like a fabulous gold mine, won't be enough to finance more than a limited part of all that Leontief and his co-workers plan to achieve. Leontief hopes to be able to raise considerable additional financial support from U.S. industry.

• **Expectations**—Leontief himself is by no means appalled by the amounts of money his kind of research requires; he believes the returns from a major advance in our understanding of the structure and functioning of the U.S. economy will be incalculable.

The results, he thinks, will help government and industry operate far more efficiently, encourage national economic development, provide a superior basis for mobilization and defense planning in event of a national emergency. And they will improve our ability to predict the effects upon all our industries, and upon each industry separately, of changes in government spending, business fluctuations abroad, new technological developments, shifts in patterns of consumption and investment, changes in the labor force.

The new techniques, Leontief believes, will thereby greatly improve policy and decision-making by either government or business.

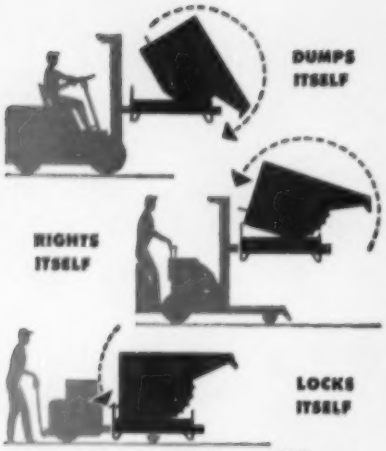
Those are the aims, but Leontief thinks it would be idiotic to attempt to say when they will be achieved. "In basic research," he says, "you can never guarantee results."

Yet Leontief is completely serious in believing that economic research, along the lines of input-output analysis, can ultimately achieve such results. The Ford and Rockefeller grants will be used to build on the work which he and his collaborators have done over the past 25 years.

## I. What It's All About

If you examine Leontief's research program in detail, you can see how he has been closing in on his quarry—a complete understanding of how the national economy is built and how it operates—and why his quest costs so much.

• **Early Start**—Like most scientific innovators, Leontief got his basic idea as a young man in his early 20s, and

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**WASSILY LEONTIEF: Rest of Harvard economics faculty passed up chances for Ford money to improve his chance.**

has spent the rest of his career exploring and developing his initial insight. Born in Leningrad in 1905, Leontief got his Ph.D. in Berlin in 1928 with a dissertation exploring the circular flow of production in a national economy. He came to Harvard in 1931.

His first $2,000 grant for input-output research came in 1931 from the Rockefeller-financed Harvard Committee on Research in the Social Sciences. The secretary of that committee, Dr. Elizabeth Gilboy, is now associate director of Leontief's Harvard Economic Research Project.

• **Idea**—Leontief's basic notion was to construct a table—like the so-called tableau economique of the 18th Century French physiocrats—which showed the way goods flowed from one industry to another (in Leontief's terminology, the input and output of each industry). The table would thus describe the interrelations of all parts of the economy—and provide a basis for studying how disturbances to the system would be absorbed or aggravated by the various economic sectors.

Working with only a single research assistant, Leontief by 1941 had completed a book—The Structure of the American Economy, 1919-1929—setting forth the first version of his input-output technique. His first model was extremely simple. It had to be, because of the limitations in his data and computational methods—this was before the days of high-speed computers. Nevertheless, the early model contained the basic elements of input-output analysis out of which more complicated and sophisticated models have grown.

• **Building the Table**—Basic to the first and to all later input-output models is the construction of a double-entry table or matrix, which looks like a chart for a super game of tic-tac-toe—or the mileage table on a road map. Along the left side of the table are listed the separate industries or sectors of the economy to be covered, one industry or sector to one row. Across the top of the table the same industries and sectors are repeated, each one heading a single column.

Every square or "cell" in the tic-tac-toe grid simultaneously stand for either an input or an output. If you're thinking about it from the standpoint of its position in the column, it's an input to the industry named at the top of the column. If you're thinking of it from the standpoint of its position in a horizontal row, it's the output of the industry named at the left of the row. The total inputs and outputs of each industry in the columns and rows will always be identical.

The point of this construction, of course, is to show what every industry sells to every other industry to further its production. When the table is opened up to include government, consumers, and foreign countries, you have a picture of the total flow of goods and services of the national economy.

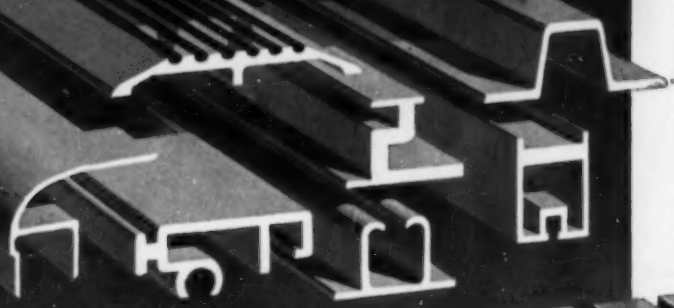
• **How You Use It**—Once you've got the basic input-output table, setting forth the statistics for a particular year, you've got to make it operational—that is, capable of being used to show the way fresh developments will disturb the whole system. You do this by translating the original table into a so-called input-output coefficient table, which sets forth the numerical relationships between inputs and outputs. The input coefficients are calculated by dividing each cell in an industry's column by the output of that industry. The coefficients will be large or small, depending on how important particular inputs are in producing particular outputs.

When the table or matrix is to be used over and over again for solving different problems, it's useful to "invert" the matrix. Then, by changing the values of the outputs of particular industries—for instance, to take account of the effect of producing an extra $100-million worth of airplanes—you can work back to see what effect this will have on your input requirements—that is, on the sales of other industries.

• **Keeping Up With Changes**—Input-output techniques of analysis are highly flexible. The coverage of a system can be virtually complete, and then it's called a "closed" model; when it's not, it's an "open" model.

An equally important—and still unsolved—variation is the handling of change in the structure of industry. A mere change in the output of an industry does not affect the value of the

# REVERE



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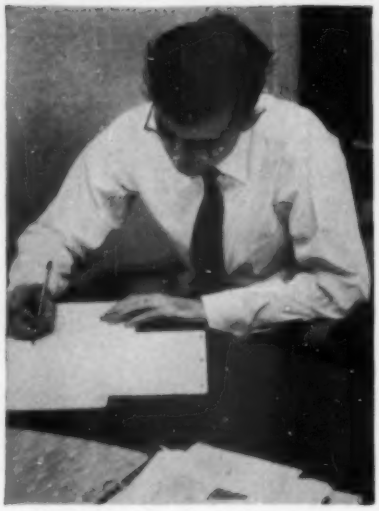


**JAMES M. HENDERSON: He's trying to figure out how nation's natural resources affect its production and trade.**

coefficients in the grid; they represent the basic technology of the industry. Present "static" models rely on this fact. Problem is to work out a "dynamic" model that could deal with the situation when an industry changes its capital structure or methods of operation.

## II. The Harvard Team

The great potential usefulness of the input-output technique for mobilization and demobilization planning was what first attracted Washington's attention to the Leontief method. In 1941 Leontief was summoned to Washington to direct work on the construction of a far more elaborate input-output model of the U.S. economy based on 1939 data. Leontief switched later in the war to the O. S. S., where his analyses of the Russian and German economies were used for strategic planning.

All through the war he continued to lecture at Harvard, commuting between Washington and Cambridge. Whatever other projects he's been on, he has never dropped his classroom teaching.

It was in 1948 that Leontief set up the Harvard Economic Research Project—financed initially by a four-year grant of $100,000 from the Rockefeller Foundation.

• **Air Force Episode**—In 1949 the U.S. Air Force supplied funds, on an annual contract basis, for parts of the project's research dealing particularly with programing and defense material requirements. In the latter part of 1953, Air Force support for input-output studies—both at Harvard and in several agencies in Washington—was cut off (BW—Aug. 29'53,p26).

The cutoff was billed as an economy

measure. It was widely rumored, however, that the new Administration and many businessmen feared input-output as an entering wedge for national economic planning—something possibly useful in wartime, but dangerous in peace.

Leontief scoffs at this view as nonsense; he holds that input-output analysis is completely neutral, can be employed by any sort of government for any set of objectives. He regards as an extremely generous, if lefthanded, compliment, the further objection that it is too powerful a tool to entrust to governments.

The Air Force's decision to drop its support of input-output studies undoubtedly also reflected the view of some economists that Leontief's technique was too blunt and inaccurate, too rigid in its assumptions, unnecessarily cumbersome, and no more reliable than less expensive sorts of analysis.

• **Funds**—In 1952, the Harvard Project got a second four-year grant of $140,000 from the Rockefeller Foundation, and a $9,000 Ford Foundation special grant for research on consumption and technological change. In 1954 the Ford Foundation gave it $140,000 more.

With what remains from the 1954 grant and the new Ford and Rockefeller grants that start next July, the project has about $530,000 for its new research program. But it's a 10-year program, and Dr. Gilboy says she can't figure on less than an annual budget of $100,000.

• **Staff**—That has to cover a staff of about 20 (besides Leontief, whose time is donated by the Harvard Economics Dept.). It includes Dr. Gilboy and five or six other senior staff members, plus 14 or 15 full-time or part-time research assistants, and three secretaries.

Harvard donates supplies and housing (on the fifth floor of Dudley Hall, one of the old "Gold Coast" dormitories on Dunster Street), as well as the use of its IBM 650 digital computer.

The key people on the Leontief and Gilboy team now are:

• Dr. Anne Carter, in charge of work on technological change.

• Dr. James Henderson, handling analysis of natural resources.

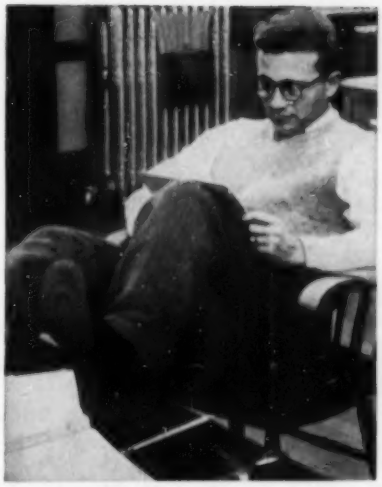
• Dr. Leon Moses, specializing in interregional analysis.

• Charlotte Taskier, in charge of digging out all empirical data to go into the input-output tables.

• Marie McCarthy and Virginia Clark, mathematicians whose job is to set up all the computational problems.

• Barbara Berman, working with Dr. Gilboy on consumption problems.

Right now the project directors are trying to bring in two additional senior staff people. They're not easy to find. As soon as Leontief has an economist well trained for input-output work, the demand for him in other universities or research centers becomes almost irresistible. The project is also serving as a training center for foreign students and fellows who want to learn input-output. Last year, there were five foreign fellows—two Italians, a Dane, Belgian, and a German.



**LEON M. MOSES: He's studying how industries pick locations, how growth rates of industries differ in various regions.**

• **Direction**—Leontief's way of running his team is on the boisterous side; Dr. Gilboy even describes his sense of humor as "crazy". He holds the reins loosely—calls staff meetings only when there is something to hold a staff meeting about, insists that staff members fly on their own wings, but is always there to argue the tough problems out with a researcher who wants some help.

## III. Plan of Action

As Leontief sees his program of research, it is completely un-typical of economic research in the U.S. Economic research in this country, he says, falls broadly into two categories: on the one hand, abstract theory; on the other, massive accumulation of data—with little or no connection between theory and fact. Leontief's aim is to combine economic theory and fact in a way that will be (1) practically useful and (2) conceptually true.

At the moment, Leontief's program is directed more at the discovery of truth than at immediate practicality. The long-term research program that Ford and Rockefeller are financing is aimed at achieving two enormous improvements in the Leontief system:

• Making it, in a sophisticated and exact way, a closed system—in other words, as complete as possible.

• Making it dynamic, to reveal how the process of economic change and development actually takes place.

To achieve these objectives, the Leontief team must carry through concentrated studies of the household sector of the economy, of government, of the investment process, of technological change, natural resources, and the structure of foreign trade.

• **Study of Growth**—Greatest interest attaches to the study of technological change, because of its pivotal role in economic development, as a cause and stimulus of economic growth. A study of how this happens starts with a layout of the inputs and outputs of each industry. Then these are arranged in strata or layers, representing older and newer techniques of production in use at a given time.

The new techniques grow in relative importance in proportion to the installation of new capacity. The assumption is made that when new plant and equipment are installed, they will generally embody the best current technological processes. Thus the technology of each productive sector undergoes gradual change, and this reacts upon all other productive sectors.

• **Finding the Facts**—Translating this theory into hard facts is a tremendous job. It calls for a comprehensive and detailed mapping of the technological mix of old and new in each producing sector. Technology has to be translated into quantitative descriptions that fit into an input-output table.

But, despite the importance of innovation in the U.S. economy, about which economists like to ramble on, only a few isolated bits of the required information can be found in the economic literature. So the Leontief team has to go into large-scale primary data collection.

It will have to tap engineering and technical source materials, gather masses of information on industrial processes by surveys and direct interviews with engineers and technical experts. The team has already made exploratory studies in a few industries—including chemicals, aluminum, trucking, and electric utilities.

• **Practical Results**—These industrial studies are likely to produce information in a form highly useful to outfits in the separate industries, regardless of how it fits into the over-all input-output scheme. As a matter of fact, Prof. Milton Friedman, of the University of Chicago, who is highly skeptical about the over-all Leontief approach, sees this as its most important contribution.

He predicts that "contributions made through this program to the understanding of particular industries, of the process of technological change, and like matters, which at this stage seem like unimportant byproducts, will turn out to be the lasting and important contributions of the program to economic knowledge."

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pleted its exploratory study called "Capital Coefficients for the Chemical Industry," a brief version was published in the November, 1953, issue of a McGraw-Hill publication, Chemical Engineering, under the title "Where Do Construction Dollars Go?" The Leontief team was deluged for months with requests from the chemical industry for more information.

• **What Is Invention?**—Leontief and his researchers are going further. They are going to use the technical information required for analyzing the spread of new technological methods to study the process of invention itself. They intend to examine the timing of new discoveries in different sectors to test the truth of the old saw that "necessity is the mother of invention." They want to find out the extent to which innovation in one industry encourages invention in others, through direct and indirect pressures on suppliers and customers.

• **Effects on Buying**—In its study of the dynamic factors in the U.S. economy, the Leontief study promises to shoot into an area full of exciting possibilities for people interested in the marketing and consumption side of the economy.

For the Leontief team is going to explore the hypothesis that changes in consumption patterns are due in great measure to the introduction of new commodities, which lead to changes in taste.

It is their hunch that price changes have very little effect in the short run on what consumers buy. They think price factors operate more slowly and indirectly by bringing about changes in use of resources and stimulating technological development of new or different or modified products—which affect consumption patterns significantly in the long run.

The input-output approach, which will translate product changes into quantitative input figures, may thereby solve the bothersome problem of just how to introduce qualitative changes into economic supply-and-demand analysis.

This has always been fixed upon quantity and price relations, and has handled quality changes only in the most vague way.

• **In Other Countries**—In the U.S. input-output studies get their support mostly from private financing; elsewhere, this situation is reversed. Various forms of input-output models have been developed and are being worked on by a number of foreign governments —among them Canada, Japan, France, Italy, the Netherlands, Norway, Denmark.

The purpose varies with the problems of the particular country. The Canadians, for instance are using their input-output model primarily to check on the reliability of their entire governmental statistics.

The input-output technique, which is like double-entry bookkeeping, provides a valuable method of spotting errors in production, consumption, income, and other data.

## RESEARCH BRIEFS

**Leather can be tested** without destroying it by a new sound wave method developed by the National Bureau of Standards. The key instrument is a pulse propagation meter, which registers the speed with which a sound pulse passes through the leather, and thus indicates the strength of the leather and the structure of the leather's fibers.

•

**Research developments** in spot and seam welding of titanium are listed in a handbook available from the Office of Technical Services, at the Commerce Dept. The report was prepared for the Navy Bureau of Aeronautics and deals with processes applied to production grades of commercially pure titanium sheet, the oxygen-nitrogen titanium-base alloy T1-100A, and 8% manganese titanium-base alloy.

•

**Increased demands** for research on electronic components and systems has caused Battelle Institute to set up an Electronic Reliability Div. at its Columbus (Ohio) laboratories.

•

**Vitamin B-6 in human diet** has been measured in a study of 10 test subjects at the University of Wisconsin. Researchers found that on the average an adult receives 0.9 mg. of Vitamin B-6 daily from his food—chiefly from meat, milk, bread, cheese, and eggs. But no deficiency seemed to develop when a subject was given only one-sixth of the normal intake.

•

**A gas turbine boat** designed for the Navy showed its speed and power in a first public demonstration in San Diego Bay last week. The 40-ft. personnel boat, called the Solar Meteor, was sponsored jointly by the Bureau of Ships and Solar Aircraft Co. It will be used to evaluate gas turbine propulsion for small craft.

•

**A roster of plant ecologists,** listing all the scientists working on the subject in North America, has been compiled by the Ecological Society of America. The idea is to foster a coordination that could be of great value in forestry and conservation.

*Who's on first?*

# Everybody

One of the pleasing things about publishing is that, come mid-winter, when last year's figures are in . . . everybody has won! The American Gazette carried the most *lines* of advertising . . . but, happily, the Monthly Clarion carried the most *pages*. And National World?—why, National World carried the most pages *per issue*.

Meanwhile, *Weekly* World (not to be confused with National World) had the largest *dollar* volume . . . whereas, breathing hard, Views of the Week broke the tape with the largest *page* volume *per* dollar per newsstand sale (in cities of 25,000 or more).

Of course, while Weekly World *gained* the most pages (or was it dollars?), the Monthly Clarion clearly gained *faster*—in terms of pages per head-of-household, that is. And Weekly View—or possibly Views of the Week—had the biggest non-Leap Year in its history!

The American Gazette, however, chalked up the most consecutive gains per month (among weeklies), and National World had the most consecutive gains per week (among monthlies, of course. You're not going to compare weeklies and monthlies, are you?).

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BUSINESS WEEK

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$$\frac{\text{Chances of Technical Success} \times \text{Chances of Commercial Success} \times \text{Annual Volume} \times \left(\frac{\text{Price}}{\text{Cost}}\right) \times \sqrt{\text{Life}}}{\text{Total Costs}} = \text{Project Number}$$

**American Alcolac's Pres. Blinoff says business, too, can find . . .**

# There's Safety in Numbers

When a businessman jumps with both feet into a field that is savagely competitive and where products change every other week, there are three things he needs in good supply: money, steel nerves, and a clear idea of what his company is going to make.

He's got to see his bank for money, his psychiatrist, maybe, for his nerves. But when it comes down to deciding what products he should make, he gets into another, very different, realm. The variables in this realm that are going to make or bankrupt him are probably lying on the top of his desk—the laboratory reports, the salesmen's messages from the field, the production men's memos. The only real problem he faces is how to arrange them all so they make sense, so that he can assure himself that it will be safe for him to push the products into production. It can be—and frequently is—a massive, seemingly insoluble problem.

And that's where the formula above comes in—into the affairs of one company, anyway. Critics may argue with its practicability, but on the foundation of this formula, American Alcolac Corp. builds all its product development decisions.

It looks like a complex base for decisions to be built on. It is rather complex, too. But there's a good reason why American Alcolac went to the extreme of building a complex formula to guide its business.

• **Tough Challenge**—Just five years ago it came blowing into the U. S.—from France—with the aim of seizing a slice of the chemical industry's profits. Probably no businessman could have chosen a greater challenge than to push himself into an industry like this, with all its unrelenting competition, its lightning-paced technology, its sudden, scarcely predictable changes of products, priorities, and markets. And the two spheres of the chemical industry that Alcolac sought out—detergents and industrial chemicals—are among the hottest areas in the whole hot industry.

Plainly, Alcolac's chief executives had to pick and choose wisely if they were to select from a wide range of practically similar products the ones that would give them the biggest profit potential.

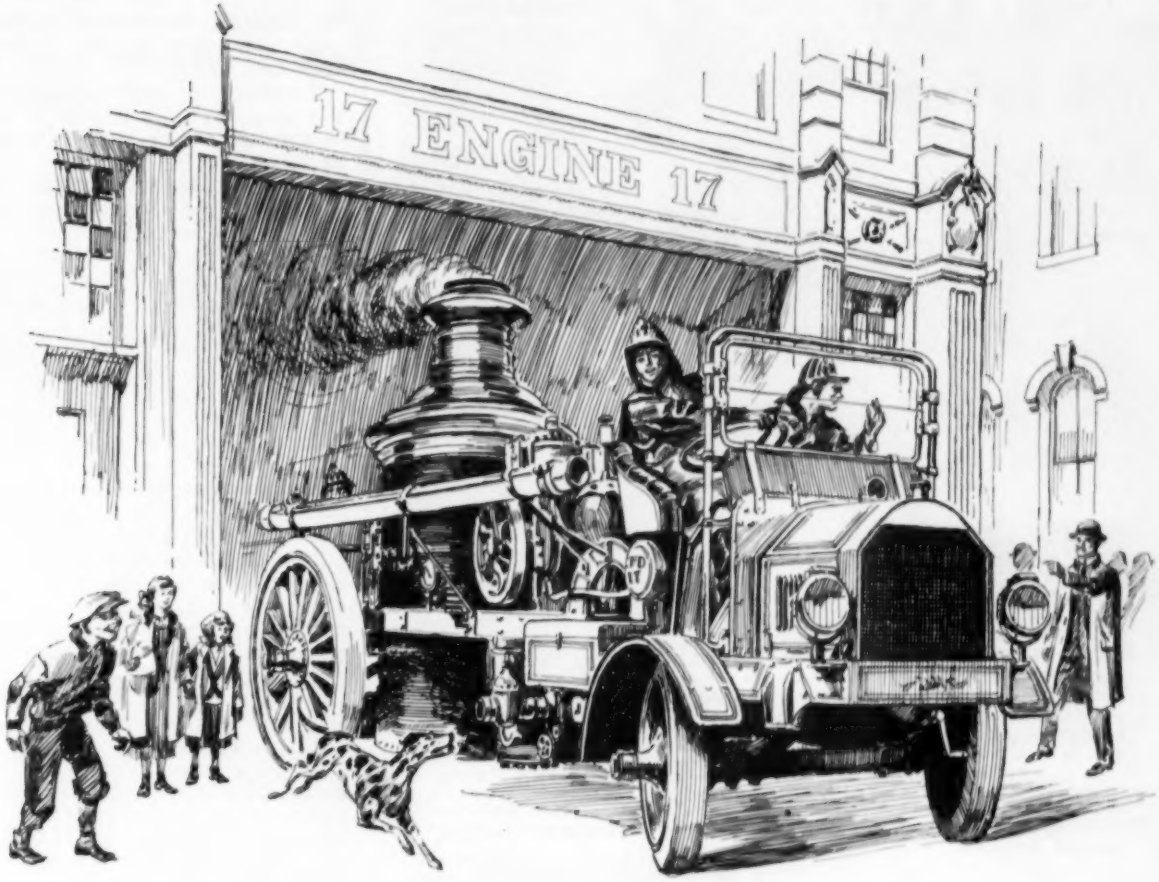
• **Long Project**—Alcolac's Pres. Vova Blinoff (pictures) had long been mulling over the idea of developing formulas that do this job of selection. He got together with Alcolac's product development director, Carl Pacifico, and they came up with the formula at the top of this page. Their idea was to fit all the variables that would affect a new product into one side of the equation, then, after a couple of mathematical moves, to come up with a figure—the project number—that would represent the product's profit potential. The higher the project number, the more profitable it was likely to be. And the higher the project number, the higher the priority the new product received in Alcolac.

This way, Blinoff guessed, every new idea would get equal treatment, no emotions would get involved in any decision to make or reject a new product, researchers who felt they'd fathered brilliant ideas in the laboratories would have to put them under the fishy eye of the mathematical formula to see for themselves whether their ideas measured up to company's profit potential benchmark.

• **One Shocker**—One of the first things Blinoff found was that some of his management's pet new product ideas registered so low in the project number scale that they should never be considered.

There's the case of a commercial laundry detergent that, at first glance, looked like a potential goldmine. It seemed to have a good market—3-million lb. a year, and a fine profit—5¢ a lb.

• **Method of Discovery**—Here's how Blinoff put it through the paces:




# Newest Thing in Fire Fighters

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Ever since that time, refiners all over the world have learned to depend upon UOP for the processing methods and techniques required to improve their products . . . and to make more and more of them better and cheaper so that they can be universally used and enjoyed.

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BO-1214, Business Week
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**clues** is BUSINESS WEEK'S own classified advertising section. You can use it effectively and economically to offer or seek business opportunities—positions—personnel.

The research director estimated that his department's chance of producing the detergent in a form suitable for commercial laundries was between 100% and 80%.

Translated into mathematical terms, this meant that the chances of technical success were 1 to .8—an average of .9.

The sales manager estimated that Alcolac's chances of getting the detergent into production—figuring on the basis of potential customers, and market conditions—were about 60%. Thus, the chances of commercial success were rated at .6.

Next, the sales manager predicted he could sell an average of 3-million lb. of the product a year; that he could sell it at an average of 18¢ a lb.; that it could be made at an average of 13¢ a lb.; and that the life of the product—the number of years it could be sold at the 3-million-lb. a year volume—averaged out at 3 years.

Those estimates filled in the top line of the equation. And to fill in the bottom line—the total cost of making and selling the detergent—Alcolac's management made these estimates: research, a median of $20,000; market development, $40,000; engineering and pilot plant work, $40,000. So the total costs were $100,000.

All this time, Blinoff and his management kept regarding the detergent as a good new line—after all, there seemed to be a profit of $150,000 a year in it if they could sell 3-million lb. and make 5¢ on every lb.

• **How It Looked**—But they set up the left hand side of the formula:

$$\frac{.8 \times .6 \times 3.0 \times 10^6 \times (18¢ - 13¢) \times \sqrt{3}}{\$100{,}000}$$

And the answer they got as the project number—the gauge of the detergent's profit potential—was 1.2.

This was so low that Blinoff saw it as a warning signal that it would be extremely hazardous for his company to press its development any further.

• **Seeing a Good One**—How does the answer look when you have a good product? Well, not long after that cold mathematical spiking of the detergent idea, Alcolac put to the test another surface active agent—a chemical that's used as an emulsifier in the rubber and plastics industry.

Here's how they probed into this one:

They rated its chances of technical success at .85, its chances of commercial success at .75, its volume at 1,150,000 lb. a year, its sale price at 31¢, its cost at 19½¢, and its life at 4 years.

They rated the cost of research at $4,000, market development at $1,250, and engineering and pilot plant at $7,500.

And this is what happened when they

***"... the company is the largest producer of alcohol sulfates in the entire United States ..."***

**STORY starts on p. 184**

set up and worked out the equation:

$$\frac{.85\times.75\times1.15\times10^{4}\times(31t-19.5t)\times\sqrt{4}}{\$12{,}750}=13.$$

This time, the total cost of getting the product to market was in a more businesslike relationship to all the factors of volume, profit, chances of success, and life expectancy.

• **One for Proof**—Alcolac is just about ready to prove whether its equation works out in practice on this product. On others of the same type, the equation has already proved itself. In fact, the company is now turning out more than 1-million lb. a year of these newer surface active agents and they account for between 25% and 30% of its total sales.

Pres. Blinoff maintains that it's largely because of the efficacy of the equation that Alcolac has built much of its position in the chemical industry today in face of all the rugged competition. The company is the largest producer of alcohol sulfates—bases for some industrial chemicals, shampoos, and cosmetics—in the country. In five years—it turned out its first batch of industrial chemical in December, 1950—its sales have grown to about $2-million a year.

• **Adaptation**—Blinoff and his top executives have become so enamored of their equation that they're applying mathematical formulas to other phases of their business, too. Just now they have developed and are testing two formulas built up to guide them on the problem of how to meet a seasonally varying demand for their products.

There are two ways to meet this: First, build new production capacity, and second, increase inventory with available production facilities. Always there's the question of which method costs more in the long run. And that's frequently a difficult question to answer, for you have to consider a host of variables.

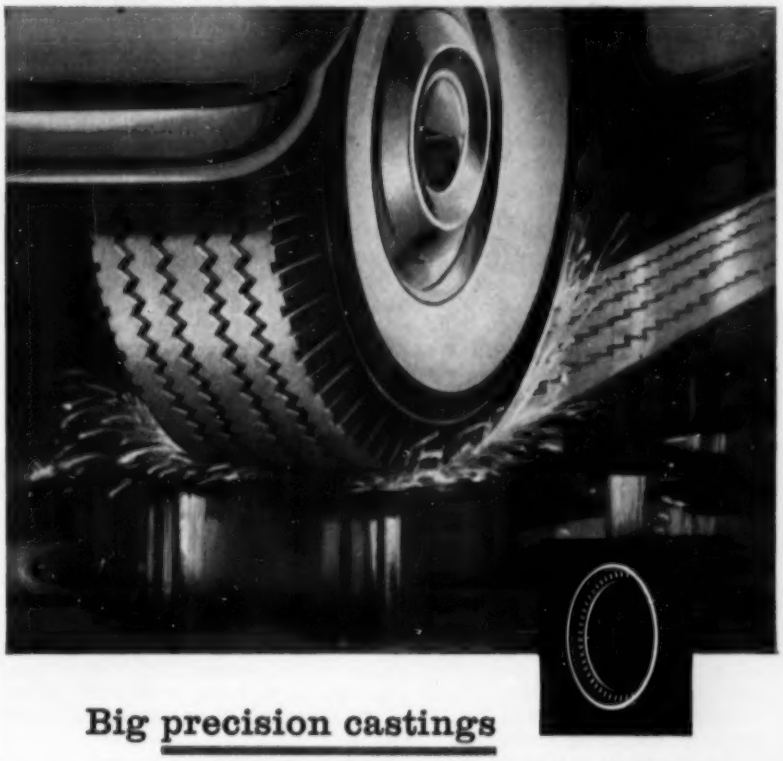
• **Two-Way Check**—But Alcolac has two formulas that its managers believe may settle the problem.

They guess that the cost of extra capacity can be determined in this manner:

**Difference in total cost of production + Cost of money (Cost of additional capacity + Cost of raw material inventory + Cost of space for raw materials and for additional machinery) + Value of unused capacity for other products = Cost of extra capacity**

And they think they can get a comparative figure for estimating the cost

VITAL PARTS FOR INDUSTRY: **RUBBER**



**Big precision castings bring you better tires faster**

When tire builders develop better tread designs, they have to get them into mass production fast. Until recently, this meant laborious machine engraving of hundreds—sometimes thousands—of huge metal molds.

American Brake Shoe's methods of making big *precision* castings changed all this. Now the tire molds are cast complete with intricate tread designs, in our own Ductalloy metal—at huge savings in production time and tooling cost. The slow, expensive engraving equipment—formerly a serious bottleneck—is used for minor cleanup operations.

Brake Shoe serves the rubber industry in other ways as well. With precision molds for a host of industrial rubber products. With tough, hard, intricate castings for rubber processing equipment. With special molds for plastics and various rubber-like synthetics.

Throughout industry, Brake Shoe products cut the cost of *wear*. If your "punished parts" should last longer, it may pay you to consult the engineers of American Brake Shoe Company, 230 Park Avenue, New York 17, New York.

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**Manufacturers of component parts for industry.**

**Brake Shoe**

# Rockwell Report

*by* W. F. ROCKWELL, JR.
*President*
Rockwell Manufacturing Company

PEOPLE ARE EXPRESSING more and more interest, it seems to us, in the quality of management of the companies they work for, invest in, or buy from.

And this interest goes beyond the question: "Is the company well managed *now*?" There is more and more concern with: "Who will be running it ten, fifteen, or twenty years from now?"

We believe this is all to the good because it serves to keep management aware that adequate provision for *continuity* of good management is a primary responsibility to employees, shareholders, and customers.

In our own company we utilize two factors, mainly, to build and maintain a reserve of management potential. The first is a continuous program of evaluation aimed at discovering men with leadership qualities.

The second is our organizational structure itself, which provides the means of encouraging and developing these qualities.

In manufacturing, sales, engineering, and other phases of our business we delegate an unusual degree of responsibility and authority to the local level. Plant managers make decisions which would, in many companies, need to be referred to headquarters. Regional managers actually run their sales areas and, collectively, establish our sales policy. Junior officials serve continuously on coordinating committees, and in so doing receive an understanding of and practical training in the handling of day-to-day management and operating problems.

The net result is that we have within our organization a reserve of experienced men who have demonstrated—over a number of years and in a wide variety of situations—that they possess and can use effectively that combination of qualities that makes for good management.

* * *

*If you mail external house organs to customers and prospects, you know the high cost of an out-of-date mailing list in terms of wasted copies and return postage. Some time ago we evolved a very simple device, printed on the envelope, which we hoped would help cut this waste. The results startled us. The first time it was used we got 2600 corrections, due to transfers, promotions, deaths, etc., which we had no way of knowing about previously. And it continues to keep our lists, totaling about 60,000, pretty free of waste. It makes things easier for the postal service, too.*

* * *

Our subsidiary, Edward Valves, Inc., is currently doubling the size of its research laboratory in East Chicago, which is already believed to be the largest in the steel valve industry. One section of the new addition will be devoted entirely to development, assembly and final testing of nuclear power valves, such as those Edward built for the U.S.S. Nautilus and Seawolf, first atomic powered submarines.

* * *

Next month the first advertising will appear on the latest addition to our Delta Radial Saw line. It is the new Delta "900"—the most powerful 9" radial saw on the market today—in which are combined many performance advantages formerly found only on larger Delta Radial Saws. Primary markets are home workshops, small commercial woodworking shops, schools, and maintenance departments.

* * *

It is our custom to write new shareholders a letter of welcome, and to tell them exactly what information about the company we will send them during each year. We also invite them to write us should they have any questions or suggestions. We are pleased not only by the fact that hundreds of shareholders do write each year, but also at the very real and often helpful interest their letters express.

*One of a series of informal reports on the operations and growth of the*

**ROCKWELL MANUFACTURING COMPANY**
**PITTSBURGH 8, PA.**

*for its customers, suppliers, employees, stockholders and other friends*

of keeping a larger inventory in this way:

$$\left(\begin{matrix}\text{Volume of extra}\\ \text{inventory}\end{matrix}\right)\left\{\begin{matrix}\text{Cost of finished}\\ \text{product}\end{matrix}\right. + \begin{matrix}\text{Cost of}\\ \text{space}\end{matrix} + \left\{\begin{matrix}\text{Cost of}\\ \text{money}\end{matrix}\right. + \left(\begin{matrix}\text{Volume of extra}\\ \text{inventory}\end{matrix}\right)\left(\begin{matrix}\text{Cost of}\\ \text{spoilage}\end{matrix}\right) + \begin{matrix}\text{Chance of price}\\ \text{changes}\end{matrix} = \text{Cost of extra inventory}$$

Passion for formulas like these has set Blinoff and his top company officers off on a search for a mathematical method of estimating all the factors that contribute to a company's over-all success or failure. They are seeking to express in numbers such things as the selection of markets and personnel, credit policy, morale, technology, quality of management, company prestige.

• **Man in Charge**—Blinoff is the driving force behind the company's whole idea of applying scientific methods of appraisal to every phase of business. His passion for it grew out of his early years in the chemical industry in France.

Blinoff started in this field 28 years ago. With a partner, Charles Nomanio, he formed a small chemical outfit.

Today their company, known as Sinnova, is the French counterpart of the U.S.'s Procter & Gamble.

Five years ago, two of Sinnova's management team, John Andre and Serge Giers, came to look over the U.S. chemical industry. They reported back that there was room available in it for 9 Sinnova affiliate. And so American Alcolac was formed. Blinoff directed its financial development from Paris and on the spot, too, during many trips here. Last year, he came permanently to Alcolac's headquarters in Baltimore.

• **Widening Range**—Under Andre and Giers, and more recently under Blinoff, American Alcolac has switched out of small production and modest sales of fatty alcohol sulfates—bases for hair shampoos and some cosmetics—and has gone in for rapid diversification.

Today, the company is turning out a wide range of industrial chemicals—tallow sulfates, nonionic detergents, chlorides, emulsifiers for the rubber industry.

It doesn't deliberately seek out major risks. Instead it has sought to concentrate on tailoring its products to suit the needs of particular industrial customers. This, Alcolac guesses, is one way to safety.

But whatever moves it will make either to expand the line of its products or even to change the price of one of its standby items—Alcolac will henceforth base its decision on the result of a mathematical formula. This way, and only this way, Pres. Blinoff says, can a businessman cut down the chances of mistake and failure. END

# why make your salesman an advertising medium?

Our text for today is taken from the plaint of a young industrial salesman whose company issues a catalog, exhibits in a few trade shows, but does no other advertising.

"When I make a call," he told us, "I not only have to introduce myself—I have to introduce my Company. By the time I have explained who we are and what we make, I have used up a large part of the time the prospect is willing to give me. In my field we sell by picking out from our line the type of products the prospect uses and showing him what these products will do for him. If the Company would use a well-balanced advertising program, I'd have at least 20 more minutes of *real* selling time on every call."

To our way of thinking, that salesman appreciates the value of his own time and his Company's dollars.

Selling any product to industry involves matching product information to the prospective buyer's problems. That's a job that can be done only by personal selling. That's why you use salesmen—at an average cost of approximately $20 per call.

When you use part of a salesman's time on a job that can be done more cheaply—and far more effectively—by some form of advertising, you are tossing away a considerable portion of your sales dollar. *Your salesman is just about the most expensive advertising medium you can use!*

## National Industrial Advertisers Association, Inc.

271 Madison Avenue, New York 16, New York

An organization of over 4000 members engaged in the advertising and marketing of industrial products, with local chapters in ALBANY, BALTIMORE, BOSTON, BUFFALO, CHICAGO, CLEVELAND, COLUMBUS, DALLAS-FORT WORTH, DENVER, DETROIT, HAMILTON, ONT., HARTFORD, HOUSTON, INDIANAPOLIS, LOS ANGELES, MILWAUKEE, MINNEAPOLIS-ST. PAUL, MONTREAL, QUE., NEWARK, NEW YORK, PHILADELPHIA, PITTSBURGH, PORTLAND, ROCHESTER, ROCKFORD, ST. LOUIS, SAN FRANCISCO, TORONTO, ONT., YOUNGSTOWN.

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# In Research

• • •

## Enlarged Gordon Research Conferences Will Draw Scientists of Many Lands

This summer, 58 famed scientists, from a dozen countries, will be guests at the Gordon Research Conferences of the American Assn. for the Advancement of Science. There they will meet U.S. scientists in a program of 36 different seminars each lasting a week. Among the visitors will be Dr. Karl Ziegler, of West Germany, whose Ziegler process for making polyethylene is licensed by a number of U.S. companies.

New seminars this year include the Properties of Metals at High Temperatures (significant for guided missile research) and Toxicology and Safety Evaluations, which was added to the program because of the controversy over food-additive legislation. The conferences will last from June 11 to Aug. 31, at three New Hampshire institutions—Colby Junior College, the New Hampton School, and Kimball Union Academy.

• • •

## New Design for Atom Smashers Glimpsed in Experiment with Magnets

Bunches of electrons racing around a 10-ft. circle at 5-million laps per second have given physicists at the University of Michigan their first tangible hint of a new design for atom smashers.

The electrons were whirled about in a one-ton tabletop model accelerator, which had been built at the Phoenix (Ariz.) Memorial Laboratory. Physicists said they seemed to be guided, at various stages of acceleration, by a revolutionary-type series of 16 magnets built into the accelerator. Not only are the individual magnets of an unusual shape, but they are grouped together in a novel arrangement. The result is a machine that gives promise of producing electrons 100 times faster than existing accelerators.

The first attempt at practical application of the idea will be made by the Midwestern Universities Research Assn.

• • •

## Buoy Can Broadcast Own Weather Data From Remotest Stretches of the Seas

The National Bureau of Standards has evolved a prototype marine weather station that automatically broadcasts local weather data. The unit is installed in a buoy that can be anchored anywhere in depths up to 3,600 ft.

The weather station, which can be left unattended for up to six months, has a broadcasting range of more than 800 miles. At regular intervals, it sends out in code the temperature of air and water, and the speed and direction of the wind.

The buoy is 20 ft. long and 10 ft. wide, and can be made of aluminum or any nonmagnetic alloy.

The Bureau of Standards thinks its buoy could fill a great gap in the collection of weather data. Today, the gleaning of such information from outside the regular shipping lanes is haphazard and limited. But the buoys could provide data that could mean a massive gain in the accuracy of weather predictions.

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# Mortgages: No Time to Cut Loose

Most economists view the phenomenal growth of mortgage debt in the postwar era with both satisfaction and concern. They acknowledge that the rapid expansion in mortgages has served as a powerful stimulus to all business activity. But they also fear that mortgage debt has climbed so far and so fast that its continued expansion may be a real danger.

A new study published by the National Bureau of Economic Research, titled Urban Mortgage Lending, throws a good deal of light on the basic change in the debt structure that has resulted from the expansion in mortgages. A look at some of its findings suggest that both the satisfaction and the concern of the economists are well justified.

The study shows, for example, that while total private long-term debt has tripled since 1920, mortgage debt has increased over six times. Mortgage debt now accounts for over 55% of total private debt, compared to 28% in 1920.

Many factors, economic and social, have contributed to this enormous expansion. In part, it represents the overwhelming desire of Americans to own their own homes. It stems, too, from the continual upgrading of American families.

However, the expansion in mortgage debt was also stimulated by two financial devices: (1) the introduction of government mortgage insurance and (2) the use of fully amortized, long-term loans. Today, government insured loans—all fully amortized—cover over 40% of all residential mortgages. And fully amortized loans are now general in conventional—uninsured—mortgages. In both these highly important respects, the present situation differs from the 1920s, when there was no government insurance and when the typical mortgage called for a lump sum payment.

But according to the National Bureau's study, there has been a more fundamental change in quantity than in quality. Most government insured loans go to "preferred risks"—to borrowers in the medium income brackets buying homes in the $5,000-to-$15,000 price range. Conventional financing covers most of the more expensive homes as well as "the low income borrower and the low-price housing market."

This suggests that some caution is needed in making loans because "the best experience during the trying years of the thirties was on the very types of loans now most frequently protected by federal loan insurance or guarantees. . . . The least favorable experience was on those that are still predominantly made without such protection."

The experience of the 1930s also shows that amortization is no sure-shot cure for mortgage troubles. As the National Bureau study points out, amortized loans do not provide automatic protection against defaults. On the contrary, their record in the 1930s was "only very little better than those made on a non-amortized basis."

All this does not mean that expansion of mortgage debt should not continue. Indeed, if the country is to keep growing, mortgage debt must expand. The present debt structure, resting for the most part on a base of middle income families, is essentially sound.

But the study does make clear that the establishment of federal insurance and the use of amortization are no substitutes for sober analysis and sound judgment. They are valuable devices, but they do not guarantee us against abuse of mortgage credit. We will avoid trouble in the long run only if we stick to the time-honored principle that a mortgage is a debt that has to be judged with the same care and caution as any other debt.

# A Good Veto

Last week Theodore R. McKeldin, Republican Governor of Maryland, did a great service to this country's international economic relations by vetoing the "beer bill" passed recently by the Maryland legislature.

The Maryland bill would have barred a brewing license in the state to any corporation unless at least 51% of its stock was owned by U. S. citizens. The target, quite frankly, was the Carling Brewing Co. (owned 89% by Canadian Breweries of Toronto), which was all set to build a $10-million plant near Baltimore. According to Associated Brewers Inc., speaking for five U.S. brewers, the bill is "designed to prevent probably unfair competition here of the most destructive sort."

It may well be that U. S. brewing companies have a reasonable complaint against Canadian brewers—for instance, against the fact that Canadian tariffs on U. S. beer are more than three times the U. S. tariff on Canadian beer. There's no denying the fact, either, that in another field of business Canada hasn't been above discriminatory tactics. Last week, Ottawa announced as of 1957 a 20% tax on the advertising revenues of all U.S. magazines circulating there as special Canadian editions.

Nonetheless, we see nothing but harm to the private enterprise system in this country, and to our foreign relations, in legislation like that passed in Maryland, and like that either passed or pending in several other states. It couldn't be better designed to damage the interests of this country. For years now the U.S. government and our leading business organizations have been doing their best to persuade foreign countries to grant fair treatment to American private capital.

To give the lie to our own words is particularly inappropriate in the case of Canada. Our neighbor to the north has been one country that has almost always gone along with us, both in principle and fact, on the investment issue—something that is proved by the huge U. S. investment in Canada in the last few years.

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